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DISEASES OF THE NERVOUS SYSTEM

A Practical Journal on Psychiatry and Neurology

FEBRUARY
1959

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DISEASES of the Nervous System

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

Childhood and Adult Family Structures of Schizophrenic Patients

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MARY H. LYSTAD, PH.D.

The importance of early family relationships in the development of a stable personality has been continuously emphasized since the work of Freud. Stressful early family relationships have been postulated as causative factors in the development of unstable or psychotic personalities. Psychotic adults in turn are thought to have a lessened ability to create stable families of their own because of their impairment.

This paper is concerned with an empirical test of these propositions. It deals with structural elements in the childhood of schizophrenics which may cause traumatic experiences for them and which may provide them with less adequate interpersonal relationships. The paper also deals with structural elements in the adult life of schizophrenics which are indicative of the degree to which they are able to achieve desired adult statuses as they grow older. These elements have been examined for schizophrenics of various sub-groups in our society, since cross-cultural and ethnic group analyses have shown that different cultures and sub-cultures vary in the way they structure family relationships, and that a structural pattern which is important in one may not be so important in another.

Most of the work that has been published on family backgrounds of mentally ill persons has been conducted without regard to subculture differences in our own society. Either the studies lack matched controls, so that comparisons between groups of similar cultural milieu are not available,[1,5,15,16] or, in those studies where cultural controls have been used, the possible effects of cultural and ethnic group variations within the samples are neglected.[4,11,12,13] From what is known about differences in family structure and function in various sub-groups, it would seem advisable to question the validity of such an assumption.

The variables chosen for analysis in the family of orientation were loss of parent in childhood, number of siblings and history of mental illness. The variables chosen for analysis in the family of procreation were marital status, number of spouses, number of children, and history of mental illness in spouses or children. It was hypothesized that a schizophrenic patient group would have experienced loss of parents to a greater degree, would have fewer siblings and would have a larger history of mental illness among blood relatives than would a matched control group, and furthermore that this relationship would hold among sub-groups of race, sex and socio-economic class in the two populations. It was hypothesized that a schizophrenic patient group would have fewer married persons, that the married persons would have fewer children, and that the married persons would have a larger history of mental illness among spouses and children than would a matched control group, and that this relationship would hold among the sub-groups mentioned.

Method

The schizophrenic patient population (N=94) was obtained from a state mental hospital serving the New Orleans area. It included all first admissions from the city over a two year time period for whom family data were available in the clinical records, who were from the middle and lower socio-

Southeast Louisiana Hospital.

economic classes, and who were between the ages of 20 and 59 years. The control population (N=94) was obtained from the outpatient clinics of a semi-private hospital in New Orleans during a two months time period. Persons attending all but the psychiatric clinics of that hospital were interviewed; any person who had ever been under psychiatric care or had ever seriously considered seeking such care was automatically eliminated from the control sample.

The control population was matched with the schizophrenic population on the variables of class, race and sex.[1] This was a group matching between variables; i.e., the proportion of subjects from the control population was similar to the proportion of subjects from the schizophrenic population in each sub-group category for these variables. Furthermore, the two populations were matched within variables, i.e., within the categories for one variable, proportionately the same number of subjects from each population were represented in each other category of the remaining two variables. Chi square comparisons of the two populations showed no significant difference between variables (e.g., middle class, white, female).[2]

Results

Family of Orientation

The first variable studied was loss of parent in childhood. If there was a loss, its cause and the age of the individual at the time it occurred was ascertained.

Table One shows that there was no significant difference between groups for three different comparisons: 1) the number of individuals who underwent parental loss, 2) the cause of the loss, 3) the age of the individual at the time of loss. Causes of loss of parent were divided into death and other causes; the latter included loss due to separation, divorce or long-term hospitalization for mental or other illnesses. In cases where there were multiple causes of loss, the first to occur was analyzed.

There were no significant differences between sub-groups of race, sex and class of each population. Within sub-group comparisons were made for each population, and no differences were revealed.

The next variable studied was number of siblings. The mean number of siblings for schizophrenic patients was 3.82 and for controls was 3.99. A *t*-test for significance of differences between means of the two populations showed that there was no significant difference. The *t*-tests for all between sub-group and within sub-group comparisons showed no significant differences.

The third variable studied was the history of mental illness; whether or not parents, siblings, grandparents, uncles or aunts were a) diagnosed psychotic and/or b) re-

TABLE 1

Comparison of Loss of Parent in Schizophrenic and Control Groups

	GROUPS		
	Schizophrenic Patients	Control	Both Groups
Loss*	39	42	81
No loss	51	50	101
Loss due to death of parent*	23	33	56
Loss due to other causes	16	9	25
Loss at age 0-10 years*	23	22	45
Loss at age 11-20 years*	16	20	36

*Chi Square=insignificant.

TABLE 2

Comparison of Mental Illness in Family of Orientation of Schizophrenic Patients and Control Groups

	GROUPS		
	Schizophrenic Patients	Control	Both Groups
Diagnosed psychotic*	30	6	36
Not diagnosed psychotic	61	88	149
Diagnosed psychotic and/or showed symptoms of emotional disturbance†	41	16	57
No indication of mental illness	50	78	128
Mental illness exhibited by parents‡	31	7	38
Mental illness exhibited by other relatives	21	10	31

*Chi square=19.19, *p* less than .01.
†Chi square=21.43, *p* less than .01.
‡Chi square=insignificant.

ported to exhibit overt symptoms of emotional disturbance, either of a severely psychoneurotic or of a psychotic kind (i.e., showing erratic or exaggerated behavior patterns such as withdrawal, prolonged and frequent outbursts of emotion, alcoholism, etc.)

Table Two shows that there was a significant difference between the two groups with regard to a) proportion of individuals having relatives diagnosed as psychotic, b) proportion of individuals having relatives who had either been diagnosed as psychotic or who were reported as exhibiting overt symptoms of emotional disturbances or both. More mental illness occurred among relatives of the schizophrenic patient group than among relatives of the controls. The table shows that there was no significant difference between the populations for the two types of relatives, parents or other relatives, who either had been diagnosed as psychotic or had shown symptoms of a disturbance.

There was also a difference between the various sub-groups in the two populations with respect to proportion of individuals having relatives diagnosed as psychotic or showing symptoms of emotional disturbance. White, middle class and male schizophrenic patients all differed significantly from controls with those characteristics. The schizophrenic patients had more mental illness in the family than did controls in each case (for the white sub-group, Chi Square=13.13, p less than .01; for the middle class subgroup, Chi Square=11.86, p less than .01; for the male sub-group, Chi Square=11.29, p less than .01). On the other hand, neither Negro, nor lower class nor female schizophrenic patients differed significantly from controls with those characteristics. Within sub-group comparisons revealed only one significant difference—that between middle and lower class schizophrenics (Chi Square= 7.69, p less than .01), with the middle class schizophrenic patients showing more mentally ill persons.[3]

Family of Procreation

The initial factor analyzed was achievement of marital status. 39.33% of the schizophrenic patients were married and 57.51% of the controls were; a Chi Square test on the two frequencies showed that there was a significant difference between the two groups, there being more achievement of marital status in the control group (Chi Square=5.45, p less than .02). Of those persons in the two groups who were not presently married, 36.83% of the schizophrenic patients were either separated, divorced or widowed, and the remaining were single. 57.54% of the controls were either separated, divorced or widowed and the remaining were single. A Chi Square test of significance showed that for the two groups there was no significant difference between those who had dissolved marriages and those who were single.

There were no significant differences in the proportion of married persons between any of the sub-groups except the white race, where a Chi Square of 4.16 (p less than .05) showed white schizophrenic patients to have a significantly smaller proportion of married persons than the white controls. Within sub-group comparisons showed no significant differences.

For those who were married, the first factor studied was the number of spouses. 75.74% of the schizophrenic patient and 85.22% of the controls had only one spouse; a Chi Square test revealed no significant difference between the two groups on this variable.

There were no significant differences in number of spouses for all the possible between sub-group and within sub-group comparisons. (White and Negro frequencies could not be statistically handled because of small numbers, but qualitative comparisons showed similarities in all cases.)

The next variable studied for those who were married was the number of children. The mean number of children for schizophrenic patients was 2.45, for controls was 2.00. A t-test showed no difference between means of these groups. The t-tests likewise showed no significant differences for the possible between sub-group and within subgroup comparisons. (White and Negro frequencies showed no qualitative differences.)

The last variable studied for married persons was history of mental illness—whether

TABLE 3

Comparison of Mental Illness in Family of Procreation of Schizophrenic Patient and Control Groups

	GROUPS		
	Schizophrenic Patients	Control	Both Groups
Diagnosed psychotic and/or symptoms of emotional disturbance	6	5	11
No indication of mental illness	27	49	76

Chi square = insignificant.

or not spouses or children had been diagnosed as psychotic and/or were reported to exhibit overt symptoms of emotional disturbance. Table Three shows that there was no significant difference between the populations in the number of family members who had either been diagnosed psychotic and/or exhibited symptoms of emotional disturbances. There were no diagnosed mental illnesses from the spouses or children of the schizophrenic patient population; there were only reports of symptoms of emotional disturbances. There were two diagnosed mental illnesses from the spouses or children of the control population.

There were no significant differences for the possible between sub-group and within sub-group comparisons. (A qualitative comparison of white-Negro groups showed no appreciable differences for all between sub-group and within sub-group analyses.)[4]

Summary and Conclusions

The first purpose of this research was to ascertain whether or not the early family structures of schizophrenics were less stressful than those of non-schizophrenics, and whether or not this held for schizophrenics with varied social characteristics. The elements of stress in early family structure chosen for analysis related to traumatic experiences in childhood and absence of persons who could provide the individual with adequate interpersonal relationships.

It was found that there was no difference between a schizophrenic patient population and a control population in loss of parents in childhood, cause of loss, age at loss, and number of siblings. This absence of difference also held for all sub-group comparisons of the two populations that were made.

There was a difference between a schizophrenic patient population and a control population in the history of mental illness in the family of orientation, the schizophrenic patients having had greater frequency of occurrence. There was no difference between the two populations with regard to type of family member who exhibited the disorder. The difference in frequency of occurrence of mental illness held for certain between sub-group comparisons; middle class, white and male schizophrenic patients all had more illness in the family than did controls with the same group characteristics. On the other hand, neither Negro, nor lower class, nor female schizophrenic patients had greater frequency of occurrence of mental illness than did controls with the same group characteristics. There was one within sub-group significant difference, that between middle and lower class schizophrenic patients; the middle class schizophrenic patients had more mentally ill family members.

The second purpose of this research was to ascertain whether or not certain adult family patterns of schizophrenics were less desirable than those of non-schizophrenics and whether or not this held for schizophrenics of varied social groups. The elements in adult family structure chosen for analysis pertained to achievement of desired adult statuses and stability of the married relationship.

There was a difference found between the schizophrenic patient population and the control population with respect to achievement of marital status. The schizophrenic patient population had fewer married persons. There was, furthermore, one between sub-group significant difference: white schizophrenic patients had fewer married persons than white controls. On the other hand, Negro, middle and lower class, female and male schizophrenic patients showed no significant differences from control persons having those characteristics.

Of those persons who were married, there was no difference between schizophrenic patients and controls with respect to certain

stability characteristics of adult family structure—number of spouses, number of children, and history of mental illness in the family. This held for all sub-group comparisons of the two populations that were made.

These findings suggest that certain factors of early family structure do not play a crucial role in the development of schizophrenia. They also suggest that certain factors of adult married life are not determined by the occurrence of schizophrenia in one of the marriage partners. Absence of a correlation between the characteristics of either the family of orientation or the family of procreation and schizophrenia was furthermore found among the sub-groups of race, sex and socio-economic class in an urban environment. This is of significance because race and socio-economic status subgroups have been shown to differ in family organization and because the sexes have been shown to receive differential types of socialization in the family unit.[2,3,6,7,8,14]

The one exception to these negative findings is the presence of a positive relationship between occurrence of mental illness and overt symptoms of emotional disturbance among relatives by birth and the occurrence of schizophrenia. These findings are in agreement with those of Kallmann[9] and would tend to support his genetic theory of schizophrenia. The fact that the relationship holds for some sub-groups but not for others, however, suggests that social factors influence hereditary-constitutional ones. This too is in line with Kallmann's thinking. It still requires more extensive documentation with a large number of cases in these particular sub-groups. Other questions which cannot be answered here but should be subjected to future research are the following: Are families in the sub-groups in which a relationship is found under more societal pressures than are families in the sub-groups in which a relationship is not found? Or, are the structures of families in the former group less adequate in handling institutional needs than are the structures of families in the latter group?

More research is needed on large numbers of matched groups of psychoneurotic patients. Psychoneurosis, a form of mental illness which is less severe and does not involve an integrative defect, may well have a different relationship to variables of both family of orientation and family of procreation.

REFERENCES

1. Bonner, H.: Sociological Aspects of Paranoia. *Amer. J. Sociol.,* 1950, 56, 255-262.
2. Davis, A., and Havighurst, R.: Social Class and Color Differences in Child Rearing. In R. F. Winch and R. McGinnis (Eds.), "Marriage and the Family," New York, *Henry Holt,* 1953, pp. 194-208.
3. Frazier, E. F.: "The Negro in the United States." New York, *Macmillan,* 1957.
4. Freeman, R., and Grayson, H.: Maternal Attitudes in Schizophrenia. *J. Abnorm. Soc. Psychol.,* 1955, 50, pp. 45-52.
5. Gerard, D., and Houston, L.: Family Setting and the Social Ecology of Schizophrenia. *Psychiatr. Quart.,* 1952, 27, pp. 90-101.
6. Green, A.: The Middle Class Male Child and Neurosis. In R. Bendix and S. Lipset (Eds.) "Class, Status and Power," Glencoe, *The Free Press,* 1953, pp. 292-300.
7. Havighurst, R. J., and Davis, A.: Comparison of Chicago and Harvard Studies of Social Class Differences in Child Rearing. *Amer. Sociol. Rev.,* 1955, 20, pp. 438-442.
8. Hollingshead, A. B.: Class Differences in Family Stability. In R. Bendix and S. Lipset (Eds.), "Class, Status and Power," Glencoe, *The Free Press,* 1953, pp. 284-292.
9. Kallmann, F. J.: The Genetic Theory of Schizophrenia. *Amer. J. Psychiat.,* 1946, 103, pp. 309-322.
10. Lystad, M. H.: Social Mobility Among Selected Groups of Schizophrenic Patients. *Amer. Sociol. Rev.,* 1957, 22, 288-292.
11. Mark, J.: The Attitudes of the Mothers of Male Schizophrenics Toward Child Behavior. *J. Abnorm. Soc. Psychol.,* 1953, 48, pp. 185-189.
12. McKeown, J.: Behavior of Parents of Schizophrenic, Neurotic and Normal Children. *Amer. J. Sociol.,* 1950, 56, pp. 175-179.
13. Oltman, J., McGarry, J., and Friedman, S.: Parental Deprivation and the Broken Home in Dementia Praecox and Other Mental Disorders. *Amer. J. Psychiat.* 1952, 108, pp. 685--694.
14. Parsons, T.: Age and Sex in the Social Structure of the United States. In R. F. Winch and R. McGinnis (Eds.), "Marriage and the Family," New York, *Henry Holt,* 1953, pp. 330-345.
15. Plank, R.: The Family Constellation of a Group of Schizophrenic Patients. *Amer. J. Orthopsychiat.,* 1953, 23, pp. 817-825.
16. Reichard, S., and Tillman, C.: Patterns of Patient-Child Relationships in Schizophrenia. *Psychiat.,* 1950, 13, pp. 247-257.

APPENDIX

1. An earlier report of social background research on these groups describes the matching procedure in greater detail.[10] An occupational index of social class was employed. The middle class includes clerical, sales and craft personnel, the lower class includes operative, household, service and labor personnel. Census bureau definitions of such occupational categories were used, and the individual's present or last held occupation was the one analyzed. The sizes of the sub-groups are as follows:

Sub-Group	N for Family of Orientation and Marital Status Data	N for Family of Procreation Data
White Schizophrenic Patients	76	30
White Controls	79	46
Negro Schizophrenic Patients	18	7
Negro Controls	15	8
Middle Class Schizophrenic Patients	52	19
Middle Class Controls	43	25
Lower Class Schizophrenic Patients	42	18
Lower Class Controls	51	29
Female Schizophrenic Patients	51	25
Female Controls	60	39
Male Schizophrenic Patients	43	12
Male Controls	34	15

2. A third group of matched patients, diagnosed as psychoneurotic, was included in the original research design. There is only one out-patient psychiatric clinic in New Orleans which offers services to large numbers of psychoneurotic patients on a regular basis, and it accepts persons primarily from the upper class, white race, under forty years of age, with college degrees—so they could not be matched statistically with the other groups. However, adequate family background data was obtained from the case histories of one hundred patients over a three year period and has been qualitatively compared with that of the schizophrenic patient and control groups (see footnotes 3 and 4).

3. The psychoneurotic group data for these three variables is as follows: With regard to loss of parent, there were considerably fewer persons in this group who experienced it than in the other two groups: 29.34% of the individuals in this group experienced it, as compared with 43.37% and 45.72% for schizophrenic patient and control groups respectively. With regard to number of siblings, the mean number for psychoneurotics was 1.86, which was only slightly lower than those for the other two groups. With regard to occurrence of mental illness, the psychoneurotic group fell between the other two groups: percentage of diagnosed psychotics and/or reported symptoms of emotional disturbance among relatives was 27.35% for psychoneurotics, as compared with 45.11% and 17.23% for schizophrenic patient and control groups respectively.

4. The psychoneurotic group data for these four variables is: With regard to marital status, the psychoneurotic group fell between the other two groups in proportion of persons who were married; 43.00% of the group members were married. With regard to number of spouses, the psychoneurotic group was similar to the other two in that the large majority (93.00%) had only one spouse. With regard to number of children, the psychoneurotics had a mean number of 1.38, which was again not substantially different from those of the other two groups. With regard to history of mental illness, the psychoneurotics had substantially more spouses and children who exhibited mental illness than did the other two groups. Diagnosed psychotics and/or reported symptoms of emotional disturbance was 28.62% for that group, as compared with 18.23% and 9.37% for the schizophrenic patient and control group respectively.

What Are We Teaching?

HAROLD C. VORIS, M.D.

Physicians are all teachers. If we do not lecture to undergraduate medical students or conduct clerkships or ward rounds, we have residents and interns under our supervision, looking to us for either formal or casual instruction. Even if we are not in contact with interns or residents, assistants and associates, younger staff men and our medical colleagues look to us for example and precept or are unconsciously influenced by our practice just as we are influenced by theirs. If we are conscientious, we will from time to time evaluate medical progress, especially in our own field and in the light of our own practice and we will ask ourselves if we are contributing actively to that progress and whether our influence is good or bad.

It is my opinion that all of our progress is not good and that some, in fact, is bad. At this point, I will ask you to remember that I am a neurosurgeon and that my re-

Chairman's address—Read before the Section on Nervous and Mental Disease American Medical Association, San Francisco, June 26, 1958.

marks, especially the critical ones, will come primarily from the viewpoint of a neurosurgeon, secondarily from the standpoint of a neurologist and least of all from that of a psychiatrist. Still, I hope they will have some general application. All is not well with modern medicine as far as the public is concerned. To realize this, one has only to consider the dissatisfaction of the public with many aspects of medical care, such as its cost, the lack of attention to the psychological needs of the patient and his relatives and friends, the lack of satisfactory care of emergencies in some situations, and the all-too-common feeling that physicians in general are more interested in their fee than in the recovery of their patients. Of course, many of these criticisms are unwarranted as far as the majority of our profession are concerned but it must be admitted that the shortcomings of a few of our members give reason for public dissatisfaction.

More disconcerting to me than the criticism of the layman is the observation of gross error of omission and commission in everyday medical practice. The administration of electroshock therapy to the patient with papilloedema, the operation for lumbar disc protrusion on a patient who is shortly after proven to have inoperable malignancy of the large bowel, and the cholecystectomy for nonfunctioning gall bladder on a patient who later proves to have a thoracic spinal tumor, all occur too frequently. We are too prone to evaluate the results of our training of younger men by their performance on the Board examinations, forgetting that their training has been largely directed toward enabling them to pass those same examinations rather than preparing them for the care of neurosurgical, neurological or psychiatric patients. And even on Board examinations, large gaps in their basic knowledge and its practical application are too often apparent.

Nowhere does poor training in the basic sciences show up more glaringly than on these same Board examinations. Those serving as examiners on the Boards that represent nervous and mental disease often have been shocked and disturbed by the lack of basic science knowledge on the part of many candidates and their equally alarming failure to correlate their knowledge of anatomy and physiology with clinical problems. My last experience as an assistant examiner on the Board of Psychiatry and Neurology several years ago led me to completely revise the neurosurgical lectures given to medical students at Loyola and present a series of lectures designed to relate the basic principles and facts of neuroanatomy and neurophysiology to the clinical problems of diagnosis and treatment of neurosurgical conditions. urely it is better for the medical student to understand the mechanisms that control intracranial pressure and the anatomy and physiology of the Circle of Willis than to be familiar with the appearance of the ventriculogram in intracranial tumors or of the angiogram in glioblastoma. It is my conviction that it is the responsibility of the clinician to teach the appropriate application of the basic sciences to the solution of clinical problems. Few teachers in the basic sciences attempt this and fewer still are able to do it with any degree of success. Further, the clinician, particularly the surgeon has the opportunity to demonstrate anatomy as it is in the living body and not in the shrunken and distorted anatomical specimen.

Let us pass on to the out-patient clinic and the hospital bedside and consider what we are teaching at these crucial points. Too often the approach of the young neurologist or neurosurgeon to a diagnostic problem is to order a battery of special tests, perhaps even before making a careful inquiry into the patient's symptoms and complaints and a careful neurological examination. As Semmes[1] has recently well stated,

> Multiple diagnostic procedures are time-consuming, painful, expensive, and not without danger. Certainly we should endeavor to choose the one most likely to turn up with the answer and, at least, to see that the patient runs the gauntlet of the electroencephalogram, pneumoencephalogram, ventriculogram, arteriogram, venogram and isotope concentration in the most likely order.

The indiscriminate ordering of diagnostic tests extends to such details as the laboratory examination of spinal fluid. How many cultures are ordered on clear spinal fluids from afebrile patients. How often are sugar and chloride determinations made when deviations from the normal, if found, would be rightly disregarded as of no clinical signifi-

cance. The defense of the intern or resident is generally the same—"I wanted the workup to be complete"—a laudable statement which too often covers up physical and intellectual laziness. If we placed less emphasis on the "complete workup" and instead insisted on a thorough analysis of the neurological signs and symptoms, and a careful evaluation of the possible information to be gained relative to the discomfort and possible risk of each diagnostic procedure before it was performed, we would save our patients time, money, suffering and unnecessary risk and we would be more competent doctors.

We give our students many good diagnostic tools, and we teach them how to use them in the sense of how to interpret the results, but do we teach them when to use them, that is, which test or tests to use in a given situation? It seems to me to be just as important to know when to do an angiogram in preference to an air study as to know how to do these procedures and how to interpret the x-ray films.

At this point, a question intrudes itself, "What diagnostic procedures can be properly done by neurologists and what should be reserved for neurosurgeons." In the report of a panel discussion on Clinical Aspects of Training in Neurology[2] held in April 1957, it was stated:

> In the presence of adequate supervision, it is certainly desirable that the trainee become proficient in the performance and interpretation of the following procedures: (1) lumbar and cisternal puncture, (2) subdural taps in infants, (3) pneumo-encephalography, (4) myelography, (5) arteriography, (6) psychologic testing, (7) testing of special senses (visual fields, calories, and so an), (8) nerve blocks, 9) electroencephalography.

As a neurosurgeon, I have no quarrel with this in the main, although I would like the recommendation better if it stated that the trainee should not only become proficient in the performance and interpretation of these procedures but also thoroughly understand their indications and contraindications.

Further, I firmly believe that no injections of air should be made into the intracranial cavity, either directly or by the spinal route *unless* facilities are available to carry out immediate craniotomy if a tumor is found and the condition of the patient deteriorates. Violation of this rule only invites possible tragedy. I also consider myelography in a different light from air studies or angiography. In the latter procedures, if satisfactory roentgenograms are obtained, they may be reviewed and studied at any time by anyone and they constitute, as it were, the whole story. However, it must be remembered that in ventriculography the surgeon may discover valuable information during the performance of the air injection. On the other hand, in myelography, the fluoroscopic examination is very important. Often significant defects are noted which the roentgenologist fails to record on film. Consequently, I believe that the surgeon should take part in the fluoroscopic examination at the time of myelography and it follows that myelography should remain in the hands of the surgical service.

In the field of surgical treatment, our practice does not always meet the standards which we profess. In its beginning, neurologic surgery, dealing mainly with neoplasms of the brain and spinal cord or with the relief of intractable pain, was not a field in which unnecessary elective surgery was likely. However, since the discovery of the intervertebral disc protrusion, which has been facetiously but perhaps justifiably referred to as "the backbone of the industry," the neurosurgeon has not been free from the accusation of performing unnecessary elective surgery. True, many disabled persons have been returned to their former occupations and much severe pain has been relieved, but when one contemplates the thousands of disc operations performed today when 25 years ago, such operations were rare, he can not help but wonder if they are all necessary. Then when one repeatedly encounters patients who have had a lumbar disc operation a few weeks or even a few days after the onset of their symptoms, with no attempt at conservative treatment, he can be sure that we are failing to teach a proper conservative approach to a condition that does not endanger life or, except in rare cases, threaten neurologic function, but because of the causation of pain does make patients readily accept surgery.

There has been a trend in neurosurgery to excessive complication in the shape of com-

plicated positions of the patient on the operating table, complicated anesthesia, and complicated postoperative care. Too often basic surgical principles are violated under the spell of enthusiasm for a new procedure or because of undue confidence in antibiotics. As Semmes[1] has pointed out, the incidence of postoperative infection in many surgical clinics is as high as before the introduction of chemotherapy and antibiotics. These drugs do not make it possible for the surgeon to safely violate the basic principles of asepsis, gentle handling of tissue, careful hemostasis and meticulous repair of wounds with the introduction of as little foreign material as possible. There is a need for more intelligent evaluation of patients before operation and care after operation rather than so much emphasis on the technical aspects of surgery.

The search for a satisfactory dural substitute has not unearthed a better material than the patient's own fascia. The newer plastics have followed tantalum as the current vogue for repair of skull defects, but the patient's tissues continue to reject these materials especially in case of secondary trauma or infection. I have never had a failure in repair of a cranial defect with autogenous bone or cartilage, and I have yet to use any other substance, even banked heterogenous bone and cartilage, which has not had to be removed on occasion. Yet the young neurosurgeon never seems to think of anything but tantalum or plastic for the repair of a cranial defect.

The members of this section can take pride that our three specialties have been singularly free from criticism of infractions of medical ethics. It appears that the type of individual that is attracted to our fields does not fall prey to the temptation that seem occasionally to lead other physicians astray.

However, there is an aspect of medical practice closely related to ethics which we should not neglect in our teaching. We are all aware that the economics of medical practice are changing. No longer is the physician expected to render service gratis in many cases and to make up his income by high fees to the well-to-do or wealthy. Today, many laymen are openly critical of professional fees that are graded to the patient's income—in fact, only the patient with low income or none at all is satisfied with such an arrangement.

The increasing prevalence of medical insurance and the continuing pressures for a socialization of medicine make a re-evaluation of our traditional fee schedules necessary. Undoubtedly as individuals we or at least most of us are facing up to this necessity. Are we teaching this to our students, and are we helping them to establish a rational basis for their own fees when they enter practice? From the questions that many younger men ask, I am afraid that many of us are not.

By this time, I suspect that you think that I am dissatisfied with modern medicine, or at least modern neurology and its allied fields, and want to return to the "good old days" of a quarter of a century ago when I was about to begin an independent practice. Actually nothing would be further from the truth. In spite of the irritations and frustrations of multitudinous taxes and tax reports, an increasing load of insurance and legal forms and increasing demands from many sources for standardization and stereotyping of records and practice, medical practice continues to increase in interest and reward, especially the nonmaterial rewards of new methods and the cure or alleviation of previously incurable disease. However, this increasing satisfaction should not blind us to our shortcomings as teachers and the need for us to improve not only by precept but also by example.

REFERENCES

1. Semmes, R. E.: In Favor of Simplicity: Applied to Medicine in General and Neurosurgery in Particular. *J. Neurosurg.*, 15:1-3 (Jan.) 1958.
2. Baker, A. B.: Clinical Aspects of Training in Neurology. Report of Conference on Graduate Training in Clinical Neurology. Sponsored by the Neurology Graduate Training Grant Committee of the National Institute of Neurological Diseases and Blindness. (Apr. 27-29) 1957, p. 10.

Trifluoperazine in Emotionally Disturbed Office Patients

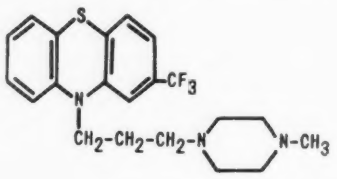
J. B. GEARREN, M.D.

The treatment of the emotionally disturbed office patient is one of the most frequent, and in some ways, one of the most frustrating challenges facing the general practitioner. To begin with, the possibility of organic disease must be eliminated as a cause of such symptoms as palpitations, insomnia, dizziness, and epigastric distress. When physical examination and appropriate studies have revealed nothing, careful observation may be rewarding. Usually the emotionally upset person will give some indications of his emotional state in the course of the interview; it is most important to note clues in the patient's presenting complaints, in his manner of answering questions, in his posture, in informal conversation. Admittedly these are not measurable, palpable findings on which to base a diagnosis, yet they are nonetheless real and in the case of the neurotic patient, highly significant. The majority of such patients do not have serious personality disorders; they suffer primarily from anxiety which is the result of financial worries, domestic crises, or other environmental stresses which have become too much to bear.

These patients come to their family doctor for reassurance and help. In the past, physicians had to depend to a great extent on reassurance because there was little to be offered in the way of medication which could help the patient through an acute anxiety situation. With the coming of the newer drugs for mental and emotional disorders, however, the physician can reinforce his supportive therapy with a number of agents which work on the central nervous system to relieve tension and anxiety-related symptoms. Useful as these drugs are, they still have shortcomings. Their benefits sometimes bring with them feelings of indifference and apathy in some patients. Because this tendency of present drugs makes them unsatisfactory in many ambulatory patients, we became interested in evaluating a new compound, trifluoperazine, in the treatment of office patients. The chemical and pharmacological properties of this compound are summarized in Table 1.

TABLE I

PROPERTIES OF TRIFLUOPERAZINE



Physical

CHEMICAL NAME: 10-(3-(1-methyl-4-piperazinyl)-propyl)-2-trifluoromethyl-phenothiazine, as the dihydrochloride salt.

DESCRIPTION: pale yellow, odorless crystalline solid, which is hygroscopic.

MOLECULAR WEIGHT: 480.44 as 2HCL.

Pharmacological

Blocks conditioned response in animals.
Possesses prolonged antiemetic activity.
Does not markedly potentiate CNS depressants.
Does not lower blood pressure significantly.
Possesses insignificant antihistaminic, antispasmodic, and anticonvulsant properties.

In the course of a year, 190 office patients were given this drug. Some of these patients were agitated or despondent menopausal women; others were ulcer patients or had functional G-I disturbances; but the majority of cases treated could probably be best categorized in psychiatric terminology as "anxiety reactions" (see Table 2). In patient after patient, the same pattern of symptoms prevailed in the absence of any organic cause: insomnia, anorexia, epigastric distress, palpitations, crying spells, and general feelings of tension and nervousness. In many of these patients the presence of these anxiety-related symptoms produced further anxiety and fears of cancer, ulcers, hypertension or heart disease.

Before treatment with trifluoperazine, each patient was examined to determine the extent of physical disease if present; appropriate laboratory studies were ordered as needed. Trifluoperazine therapy was com-

bined with supportive therapy in the form of understanding and a sympathetic approach. Patients were encouraged to talk about their tension-producing problems and were given reassurance and counseling as common sense dictated.

The dosage of trifluoperazine was 1 mg., two to four times a day, depending on the intensity of presenting symptoms. Inasmuch as the drug proved to be long acting, many patients were maintained on a b.i.d. regimen with good results. Medication for specific organic symptoms was administered concomitantly with trifluoperazine. Patients were seen at weekly and then bi-weekly intervals, and their blood pressures were checked at each visit. Blood studies were run at six week intervals on all patients who continued on the medication for long periods.

One of the most frustrating elements in the treatment of mild emotional disorders is the difficulty of measuring results of symptomatic treatment. Since many anxiety-related symptoms are the result of some acute situational stress, they are by nature self-limited, and the physician may be easily misled concerning the success of his therapy. Furthermore, the incidence of placebo reactions is bound to be high among such patients, and it is easy to attribute success to a particular medication when a placebo might very possibly have met with the same success.

In this study, an attempt was made to control in some small way these difficulties in evaluating. The first control was a historical one: 59 of the subjects studied had previously taken other tranquilizing agents with unsatisfactory results. Since they had not responded to other agents of this type, improvement on trifluoperazine within this control group could be reasonably presumed to be due to a therapeutic action rather than to a placebo response. By exercising a second control, we attempted to eliminate the majority of patients whose anxiety might have been temporary and self-limited. Thirty-five patients who took the drug for less than a week or who failed to return for follow-up treatment were dropped from the final results because of the likelihood that their anxiety had been of a self-limiting nature which would have disappeared without the medication.

Results of treatment were then classified according to the following criteria: "A" indicates that the patient became symptom free, and benefited from supportive counseling, becoming more stable and better able to face stress situations. "B" means that the patient experienced relief of some symptoms and a lessening of degree in others, and was able to gain some insight into his problems. "C" indicates that there was no change in the patient's condition, while "D" indicates that symptoms were aggravated or that the drug was discontinued because of annoying side effects.

Table 2 summarizes the results in the entire series, excluding the 35 patients dropped because they did not meet the control conditions. About 77% of the patients showed improvement. Table 3 shows the results obtained in the group of 59 patients who had previously received other mild tranquilizing drugs. The 76% who improved in this group correlates well with the results seen in the entire series and somewhat minimizes the likelihood of a high incidence of placebo response.

TABLE 2

RESPONSE TO TRIFLUOPERAZINE IN ENTIRE SERIES

	No. of Pts.	A	B	C	D
Menopausal Syndrome	32	19	6	6	1
Peptic Ulcer	14	11	1	–	2
Functional G-I Disorder	9	8	1	–	–
Others Disorders with Anxiety Component	13	6	2	5	–
TOTALS	155	93	27	30	5

TABLE 3

RESPONSE TO TRIFLUOPERAZINE IN CONTROL GROUP

	No. of Pts.	A	B	C	D
Anxiety Reaction	29	17	4	7	1
Menopausal Syndrome	13	7	4	1	1
Peptic Ulcer	14	11	1	–	2
Other Disorders with Anxiety Component	3	–	1	2	–

Generally speaking, improvement was noted within a week. Some patients reported a distinct lessening of symptoms within 24 to 48 hours. Patients reported that they slept better and felt refreshed on awakening.

Anxiety-nurtured fears of cancer, heart disease, hypertension or other dangerous diseases responded to reassurance about the soundness of their health. Patients with poor appetite and nervous indigestion noted rapid improvement in these symptoms. For example, a 37-year-old woman who had lost 10 pounds began to regain her appetite within a week and was able to enjoy her meals normally; she gained up to her normal weight after these anxiety symptoms had been controlled by the medication. Weight gain resulting in obesity, as seen with other tranquilizers, was not observed in this series.

Trifluoperazine proved to be a worthwhile addition to the regimen of ulcer patients. Some who had shown little improvement on an ulcer routine and antacids or anticholinergics showed marked improvement when trifluoperazine was added to control the anxiety which provoked or irritated the ulcer. An interesting case in point was a 12-year-old child who had a proven duodenal ulcer. This unfortunate youngster had been exposed to his widowed mother's love affair and suffered the ulcer symptoms after his mother had a child out of wedlock. He responded poorly to conventional ulcer therapy. When trifluoperazine was added to his therapy, his symptoms diminished within a week. Because of the continuing emotional distress in his home life, the child was maintained on trifluoperazine for four months with continued good results. Although the drug had no effect on the ulcer itself, it enabled him to withstand a period of acute situational stress and to profit from counseling, thereby increasing the likelihood of adjusting to his problem.

Similar anxiety reactions in other patients yielded dramatically to trifluoperazine coupled with supportive therapy. Once symptomatic relief resulted, getting the patient to talk about the fears, frustrations and resentments which lay at the roots of his difficulty proved to be no problem.

The response in patients whose anxiety was associated with depression, irritability, moodiness, and weeping, was especially noteworthy: their spirits brightened and initiative and interest picked up considerably in contrast to their pretreatment inertia. This effect may be distinctive, since other tranquilizing drugs seem to increase this inertia.

The indifference which occurs commonly with other tranquilizers was absent. In contrast, patients reported that they were able to concentrate better, that they had more energy. Daytime sleepiness or lethargy seldom occurred. The relative absence of this side effect would seem to make trifluoperazine especially valuable in treating office patients. The drug produced no serious reactions. There was no evidence of hypotension or fainting. No jaundice or blood dyscrasias were observed.

Eight patients reported mild side effects, including dry mouth, giddiness, dizziness, flushed feeling, palpitations, lethargy and jitteriness. Only 3 patients of the 155 treated discontinued the drug because of side effects. Usually, any side reactions subsided after one week's therapy.

Summary

This report summarizes one year's experience with trifluoperazine, a new compound to relieve anxiety, which was evaluated in 155 office patients suffering from anxiety reactions, menopausal syndrome, or functional disorders. Of those treated 71% showed marked symptomatic relief. The percentage improved was similar even in the 59 patient control group who had not responded well to previous tranquilizers. Side effects of drowsiness and lethargy were negligible. In fact, on trifluoperazine, patients reported that their powers of concentration and attention increased and that they experienced no diminution of drive or initiative. Response to trifluoperazine usually occurred within the first week of administration, frequently within the first 24 to 48 hours. Used in low dosages, it does not cause daytime drowsiness or inhibit normal interest and initiative. For this reason, it appears to be particularly useful in treating office patients.

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Parenteral Methylphenidate Hydrochloride (Ritalin) in Chronic Underactive Schizophrenics

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Introduction

In recent years the management of the chronic schizophrenic patient has made startling progress. Electroplexy, leucotomy and more recently chlorpromazine and reserpine have virtually revolutionized the mental hospital chronic wards. Not the least of the advantages of these treatments is the accessibility to psychotherapy—both group and individual—of patients in whom it had been otherwise impossible. The results are an increased discharge rate of long stay patients, unlocking of many wards and closer integration of the chronic patient with the community outside the hospital. After 3½ years experience with chlorpromazine and rather less with reserpine the author has become increasingly impressed by the fact that the more actively disturbed the patient the greater is the benefit from these drugs. Perusal of the literature suggests that this is also the experience of many other workers. (J. Delay et al. 1956; J. Boudin et al. 1956; S. Malitz et al. 1956; F. Rinaldi 1956; G. De Martino 1957; D. Pearl et al. 1956; L. Wing 1956.) Conversely results in withdrawn, regressed and underactive schizophrenics have been disappointing.

Methylphenidate hydrochloride (Ritalin) was reported to be of value in combating the lethargy and drowsiness induced in many patients by reserpine therapy (Madi et al. 1956; J. T. Ferguson 1955 & 1956). Methylamphetamine has also been used for the same purpose (J. Boudin et al. 1956). This led to the use of oral and parenteral methylphenidate hydrochloride alone to produce improvement in underactive chronic schizophrenics (J. T. Ferguson et al. 1956). Favorable results were obtained with oral doses up to 40 mgms. t.i.d. which produced improvement in 59 (87%) of a group of 68 patients. A behavior profile chart using 15 items was made. Patients selected for trial had only negative scores on 12 of these items. Intravenous injection of methylphenidate hydrochloride was also used in doses up to 30 mgms producing a marked change of behavior in apathetic, lethargic and underactive schizophrenics. These improvements were of limited duration but reproducible and in some cases intramuscular injection of the drug produced the same effects and oral dosage appeared to maintain them.

Methylphenidate hydrochloride was introduced into clinical medicine as a psychoanaleptic drug, with anti-depressive qualities. Such drugs are not new to medicine and include strychnine, ephedrine, amphetamine sulphate (Myerson 1939). Methamphetamine hydrochloride (Russell 1954), metrazol (Reitmann 1941), caffeine sodium benzoate (Broder 1937), and isoniazid (Bennett 1954, Crane 1956). For one reason and another most of these drugs have proved unsuitable for use as psychoanaleptics except in limited fields.

Meier et al. (1954), investigating the activities of methylphenidate hydrochloride on experimental animals reported that it caused marked psychomotor and respiratory stimulation and was antagonistic to certain narcotics. Increase of heart rate and moderate hypertension were also reported but there were at the same time no essential peripheral sympathicomimetic effects. They placed its pharmacological activity between that of caffeine and amphetamine. Cole & Glees (1957) reporting on the effects of amphetamine and methylphenidate hydrochloride on normal and leucotomised monkeys said that both drugs caused a decrease in the daytime activity but an increase in tic-like movements and fidgeting. However, methylphenidate hydrochloride unlike amphetamine did not interfere with the sleep pattern. They postulate that both drugs act upon the posterior hypothalamus.

Favorable reports on the use of oral methylphenidate hydrochloride in depression have been made by Stier (1955), and Geller

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(1955). Both authors point out that methylphenidate hydrochloride is contraindicated in depression accompanied by anxiety. In his clinical work the author has on a limited number of patients confirmed these reports but would stress that the indications for oral methylphenidate hydrochloride in depression are limited and it should never be used as a substitute for electroplexy.

The problem of the underactive, withdrawn schizophrenic patient stimulated the author to investigate the use of methylphenidate hydrochloride on them. Parenteral administration was selected as it would produce any changes rapidly and there would be no uncertainty as to the drug not being ingested or absorbed.

Selection of Patients

Twelve female patients were selected from a ward of 70. Initial selection was by knowledge of the clinical state of the patient but the underactivity of each patient was confirmed by the use of the Activity-Withdrawal Scale (A-WS) of ten items which were abstracted and modified by Venables (1957) from the M.S.R.P.P. scale devised by Lorr et al. (1951). An arbitrary figure of 20 was taken to be the rating score above which a patient was not considered withdrawn enough to be included in the investigation. The median score on this table is 25.

All the patients were chronic schizophrenics. It was difficult to classify them into sub-groups as many of them had been placed in different sub-groups at various times in their illnesses. Most of the cases seem to have been hebephrenic and catatonic schizophrenics. Paranoid schizophrenia, and paraphrenia were not in evidence at the time of selection of the patients and on perusal of their histories paranoid features, when they occurred, were on the whole transient.

Of the twelve original patients one developed an empyema during the course of the investigation and has been omitted from the series. The mean age of the patients was 49 years ranging from 29-61 years. It was difficult to assess accurately the duration of illness but the mean duration of hospitalization was 19 years 10 months ranging from 7 to 36 years.

All the selected patients had had one or more of the following treatments; electroplexy, reserpine, chlorpromazine, occupational therapy without any substantial or lasting benefit.

The A-WS ratings were performed independently by the ward sister and her deputy, both of whom had known the patients intimately for many years.

Method

In the preliminary stage patients were taken off all treatment for two weeks before the selection ratings were made. After this they all had an EEG, differential white blood cell count and hemoglobin estimation. After these preliminary measures the investigation was divided into three stages.

Stage I. Each patient was given an intravenous injection of 20 mgm methylphenidate and its effect upon the pulse rate, blood pressure and mental state of the patient was carefully observed.

Stage II. This consisted of the intramuscular injection of 20 mgm of methylphenidate hydrochloride twice daily for three days during which the patients were closely observed. On the third day the two observers made their independent ratings. During the course of this treatment each patients' thymol turbidity and serum bilirubin were estimated and the differential white blood cell counts were repeated.

Stage III. Each patient had 20 mgms of methylphenidate hydrochloride by intravenous injection for three days, again being rated by the two observers on the third day. During this stage two patients were given 20 mgms of methylphenidate hydrochloride intravenously at the same time as an electroencephalograph was being taken. This was wholly unsuccessful in one patient but partially successful on two occasions in the other when 20 and 40 mgms of methylphenidate were given.

Results

All the pre-treatment E.E.G. recordings were within normal limits. All the differential white cell counts were within normal limits before treatment commenced. Methylphenidate hydrochloride did not produce any significant change in them. No significant correlation between A-WS ratings, age and

length of hospitalization could be found. Independent A-WS ratings were never more than three points apart so they were considered reliable. The average of the selection ratings of observer "A" was 17.00—ranging from 14-20, and that of observer "B" was 16.17—ranging from 11-19. The average of the combined selection ratings of "A" and "B" was 16.39.

Stage I. After the intravenous injection of 20 mgms methylphenidate hydrochloride the pulse rate rose in all patients except two. The rises ranged from 2 to 20 beats per minute. In the two patients where it fell it did so by 8 and 12 beats per minute respectively.

Blood pressure readings taken before and after the injection show a rise in the systolic pressure in all but three patients. It rose up to 20 points in three cases. Where it fell it did so by 10 points per patient in each case. Diastolic pressures on the whole remained about the same or showed only a slight rise. However, in two patients it rose by as much as ten points.

Mental changes noted after the injection were increased activity and talk in eight patients and increased initiative in three. Despite the increased activity and talk of the eight patients only in one was the talk rational. In two patients the speech was quite spontaneous. One patient became actively psychotic after injection being converted from a quiet, passive almost mute person to an over-talkative, over-active, babbling individual who giggled and chattered in a silly irrational fashion.

One patient became exceedingly melancholic after the injection, weeping and expressing ideas of unworthiness. Three patients showed no detectable change. The only noteworthy adverse effect noted was that three patients vomited within twelve hours after the injection.

Stage II. After twice daily intramuscular injections of 20 mgms of methylphenidate hydrochloride for three days there was only a definite change noted in the mental states of two patients. In each case the patient became hostile, aggressive and more actively disturbed. Vomiting, nausea and reduction of appetite occurred in five patients.

On examination of the A-WS ratings there were generally insignificant changes, mainly upwards but down a half point in three cases. However, in two cases there was a significant rise of 2.5 and 7 points respectively. The validity of the latter is in some doubt as the two observers had difficulty in rating this particular patient on this occasion and their two assessments differed by five points.

The average of the ratings after intramuscular injection was 17.70 which is not a significant change from the pre-treatment average rating of 16.59.

Breaking down the results into averages for the two observers—

	Observer "A"	Observer "B"	Averages
Pre-treatment score	17.00	16.17	16.58
Post-treatment score	17.63	17.78	17.70
Difference	+0.63	+1.61	+1.12

Stage III. After twice daily intravenous injection of 20 mgms of methylphenidate hydrochloride for three days there was no great clinical change observed but again nausea, vomiting and anorexia were noted in the same patients. The one patient who became floridly psychotic after the initial intravenous injection continued to repeat this after each of the series of six injections. In three patients the A-WS ratings were raised significantly by 2.5, 4 and 4.5 points. The trend of the A-WS ratings in the remainder of the patients was slightly upwards. Breaking down the results again for the two observers—

	Observer "A"	Observer "B"	Averages
Pre-treatment score	17.00	16.17	16.58
Post-treatment score	18.18	17.63	17.90
Difference	+1.18	+1.46	+1.32

In only one patient was it practicable to give an intravenous injection of methylphenidate hydrochloride at the same time as an electroencephalograph recording was being taken. This was performed on two occasions—20 mgms of the drug being injected on the first occasion and 40 mgms on the second. Injection of the drug on both occasions appeared to block Alpha rhythm and produced sporadic diffuse fast components (@ 25 c/s) of very low amplitude. Apart from this there was no specific abnormality apparent in response to the drug.

Discussion

Taking the eleven patients as a whole there was not a significant improvement either observed clinically or assessed by the A-WS ratings. However, in some cases there was a marked increase in activity, spontaneity and communication as had been expected from the drug judging by the reports of previous workers. These were noted more particularly on the occasion of the initial intravenous injection but they were not sustained in Stage III of the investigation when six intravenous injections were given. In only one case was there any sensible (i.e. non-psychotic) communication and increase of initiative, and again this only occurred on the occasion of the first intravenous injection. The one patient who showed a consistent response to the drug intravenously could hardly be said to be improved. Although her spontaneous speech increased considerably it was psychotic and such increases of initiative that occurred were mainly in an amorous direction. The fact that this occurred does suggest, perhaps, a further use for intravenous methylphenidate hydrochloride. It could be used in the same manner as has methedrine in an attempt to uncover a suspected schizophrenic psychosis by increasing spontaneous speech which would then reveal the characteristic thought disorder.

Although the mean A-WS ratings for the group did not show significant change it must be noted that all the mean scores were higher after administration of the drug, being greatest after the intravenous injections. In the three cases where there was a fall in the A-WS score it never exceeded one point. The rating scores of two patients were unchanged, one after the intramuscular injections and one after the intravenous injections.

Taking individual patients in Stage II we find that there were two noteworthy increases in the rating scores of 2.5 and 7 points respectively. In the former case an increase of 4.5 points was seen in Stage III so it would seem that in this particular patient methylphenidate hydrochloride was of definite benefit, although this was not confirmed by clinical impression. In the latter case there was only an increase of one point in Stage III. As has already been pointed out the observers had difficulty in rating this patient and differed considerably in their scores so that it was felt that the result in Stage II was probably not valid.

Generally speaking the greatest increases in rating scores occurred in patients who had the lowest pre-treatment scores.

In the dosages used methylphenidate hydrochloride seems to be a safe drug. Its chief side effects are upon the blood pressure, pulse rate and appetite. There were moderate increases in systolic pressures after intravenous injection but the rise in diastolic pressure was slight. It is unlikely that these results are of great significance because serial blood pressure readings were not taken and casual readings are notoriously unreliable. The rise in pulse rate was in accord with the findings of other workers. The most persistent side effect and the one that was most noticeable clinically was the decrease of appetite amounting to actual nausea and vomiting in some patients. This effect has not been commented on with any great frequency in published work on methylphenidate hydrochloride. It may be that this side effect was more prominent in this investigation owing to its design. If the dosage had been over a greater period and built up more gradually than perhaps anorexia, nausea and vomiting would not have been so noticeable and troublesome.

It has already been observed that methylphenidate hydrochloride was reported of value in countering the side effects of reserpine and this led to its use alone with beneficial results. It may be that there is a difference in the lack of activity and withdrawnness of the chronic schizophrenic and the underactivity produced by reserpine which is thought to be a result of this drug's action upon the vegetative centres of the brain. There is much speculation but little proof that these same centres are involved in schizophrenia of the regressed and withdrawn type. If this were so one might expect methylphenidate hydrochloride to have a uniformly beneficial effect upon this type of illness but this, the author, has not been able to confirm. It is likely that the situation is far more complicated and that the

diencephalic centres whose underactivity seems to produce the picture of withdrawn schizophrenia are themselves subject to many cerebral inhibiting and stimulating systems which are not fully understood (Bowen, 1957).

It has been seen that in one patient methylphenidate hydrochloride consistently "released" florid schizophrenic symptoms in an otherwise underactive withdrawn person. Perhaps in this case methylphenidate hydrochloride sufficiently stimulated diencephalic centres so that they could overcome inhibition imposed by higher centres.

It should be stressed that this was not a controlled trial of methylphenidate hydrochloride but was more in the nature of a pilot survey. It is possible that some of the few and slight beneficial effects seen were due to the concentration of interest of these patients—the so-called "cossetting effect." This is, however, unlikely, as nearly all the patients in this series had been at one time or another intensively treated by other methods and on those occasions no improvements were noted that could be ascribed either to the treatment or to cossetting. Although definite results were lacking in this investigation such information as was gained does suggest that it would be worthwhile subjecting methylphenidate hydrochloride to more prolonged and exhaustive trials in chronic withdrawn schizophrenics perhaps using a higher dosage than that employed by the author.

Summary

(1) The literature on methylphenidate hydrochloride (Ritalin) and its employment as a psychoanaleptic drug is briefly surveyed.

(2) An investigation into the use of parenteral methylphenidate hydrochloride in chronic withdrawn underactive patients using an Activity-Withdrawal Rating Scale is described.

(3) The results of this investigation show that only slight overall improvement resulted except in individual cases where the improvement was more marked but transient and not reproducible.

(4) Methylphenidate hydrochloride in the dosage used seems a non-toxic drug, its chief side effect being anorexia.

(5) The results are discussed and some speculations made upon the mode of action of methylphenidate hydrochloride.

(6) It is suggested that this drug is worthy of further trials.

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REFERENCES

Bennett, I. F., et al.: *Arch. Neurolog. Psychiat.,* 71: 54, 1954.

Boudin, J., and Kline, N. S.: *Psychiatric Research Reports* No. 4, p. 71, 1956.

Bowen, H. M.: *Med. J. Aust.,* 1:9, p. 268, 1957.

Broder, S. B.: *Am. J. Psychiat.,* 93:957, 1937.

Cole(J., and Glees, P.: *J. Ment Sci.,* 103:431, p. 406-417, 1957.

Crane, G. E.: *Am. J. Psychiat.,* 112:949-501, 1956.

Delay, J., et al.: *Presse Medicale,* 64:22, p. 493, 1956.

De Martin, G.: *J.A.M.A.,* 163:2, p. 180, 1957.

Ferguson, J. T.: *Ann. N. Y. Acad. Sci.,* 61:101-107, 1955.

Ferguson, J. T., Linn, F. V. Z., Skeets, J. A., and Nickels, M. M.: *J.A.M.A.,* 162:1303, 1956.

Geller, W.: *Medizinische,* 16:606-608, 1955.

Lorr, M., Singer, M., and Zobel, H.: *Psychiat. Serv. Cent. J.,* 3, No. 3, 1951.

Madi, M. L., and Kovitz, B.: *A. M. & C. T.,* 3:5, p. 309, 1956.

Malitz, S., Hoch, P. H., and Lesse, S.: *Am. J. Psychiat.,* 113, 1956.

Meier, R., Gross, F., and Tripod, J.: *Klin. Wschr.,* 32:445-450, 1954.

Myerson, A.: *New Eng. J. Med.,* 221: 561, 1939.

Pearl, D., et al.: *Arch. Neurolog. Psychiat.,* 76:198, 1956.

Reitman, F.: *J. Ment. Sci.,* 87:96, 1941.

Rinaldi, F., Rudy, L. H., and Himmwich, H. E.: *Amer. J. Psychiat.,* 112:9, p. 678, 1956.

Russell, A. J., et al.: *Psychiat.,* 28:38, 1954.

Stier, C.: *Therap. d. Gegenw.,* 94:92, 1955.

Venables, P. H.: *J. Ment. Sci.,* 103:430, p. 197-199, 1957.

Wing, L.: *J. Ment. Sci.,* 102:428, p. 530, 1956.

Electric vs. Chemical Tranquilizers and Energizers in a General Hospital Private Psychiatric Practice

WILLIAM L. HOLT, JR., M.D.

The purpose of this paper is to present a study of the impact of the newer drugs on the private practice of psychiatry in a general hospital setting. Tranquilizers were introduced into the author's private practice at Albany Hospital in January 1954, when chlorpromazine became available. Other phenothiazines and meprobamate were used in turn. Newer psychic energizers have had wide use in his practice in the past three years, especially iproniazid. A comparison will be made in the use of electroconvulsive therapy in 1951 through 1953, and its use in the years following 1954.

The author, in 1952, was one of four private attending psychiatrists engaged in part-time teaching and practice, a group that, in 1957, had grown to seven. The Psychiatric Department of Albany Hospital has operated as an integral part of a voluntary general hospital with teaching responsibility for clinical instruction of Albany Medical School student since 1905, with an out-patient clinic and a 58 bed in-patient service of private and charity patients. The nearest state mental hospital is 80 miles away. This department has long been approved for full residency training and all diagnoses are carefully reviewed in weekly staff meetings.

The In-Patient Service of 58 beds was limited to eight beds in open-ward areas until August 1957, when one of the two locked wards was made an open unit. Patients are not under commitment, but may be admitted as involuntary patients to the locked ward when necessary. The proportion of voluntary admissions increased markedly in 1957 with the additional facilities. Voluntary and ambulatory out-patients, private and charity, receive electroshock treatments in the Out-Patient Clinic Treatment Unit three mornings a week. Involuntary, locked-ward patients receive electroshock therapy on their ward on the three alternate mornings. Those on daily treatment usually are treated in both areas.

The technique of electroshock treatment has varied in the period in question. In 1951, modification of the seizure was infrequent. In 1952 the use of sodium pentothal anesthesia and succinylcholine muscle relaxation became the rule.

The use made of the newer drugs by the four to seven private attending psychiatrists and the changing group of residents in training status has varied markedly. The impact of these new drugs on the total number of patients, and use still made of electroshock, will be supplemented by a detailed comparison of the author's personal cases, approximately 10% of the total.

Findings: 1951-1957—Total Psychiatric Service

In the seven year period, 1951 through 1957, a total of 9,946 patients were admitted to and discharged from the Psychiatric Service of Albany Hospital. The first three years saw a steady rise in patients under treatment and the total number of electroshock treatments given, admissions in 1953 being 0.8% above 1951, while EST's given rose 51%. The rise in EST's was only among private patients, some 105%, as compared to a drop of 15% among non-private patients. The year 1954, which saw the be-

CHART 1

ELECTROSHOCK THERAPY AT ALBANY HOSPITAL 1951-57

BEFORE AND AFTER INTRODUCTION OF TRANQUILIZER DRUGS IN 1954-1955

	1951	1952	1953	1954	1955	1956	1957	Total
All Admissions	1,412	1,425	1,508	1,423	1,417	1,369	1,392	9,946
Private Patient Treatments	2,493	3,576	5,113	4,981	5,147	4,429	5,622	31,361
Non-Private Treatments	2,089	1,962	1,815	1,712	1,459	1,228	1,461	11,726
% Private EST of Total	54%	64%	73%	74%	77%	78%	79%	73%
Total Electroshock Treatments	4,582	5,538	6,928	6,693	6,606	5,657	7,083	43,087

ginning of the new drug era, was accompanied by a 5.6% drop in number of admissions and a 3.4% drop in use of EST. In the period 1955 and 1956, admissions continued to decline from the 1953 peak of 1508 patients to the low of 1369 in 1956, a decrease of 9%. The total number of EST's given dropped more than the admissions, to a total of 18% (from 6,928 in 1953 to 5,657 in 1956). This reduction was greater in the non-private patients (some 32%) than in the private group where the drop was 13%.

In 1957, the complications from tranquilizers and the endless need for their use led to less enthusiastic reliance upon them. New psychic energizers were seen to have similar limitations. The number of admissions rose again, though only 2%. The newer drugs had generally proven unsatisfactory while the patient was under care by the referring family physician. In 1951 electroshock treatments were given to 58% of private patients. This proportion rose in 1957 to a peak of 79%. For ambulatory private patients, it rose to 86% of the private and charity patients combined, as compared with 51% in 1951. Of the total number of private patients receiving EST, 42% were given on an ambulatory basis in 1951 and 61% in 1957. The number of EST's given each patient treated declined from 6.5 in 1954, to 5.1 in 1956, but rose in 1957 to 6.2. The total number of EST's given in 1957 was 25% above the 5,657 of 1956, for a high of 7,083.

Results of Treatment: In-Patient Service

Treatment results can be variously appraised. The data available made evaluation of degree of improvement unreliable except as destination on discharge reflects clinical condition (as well as other factors).

In 1952 and 1953, the percentage of all discharges from state mental hospitals was 15.8%, as compared with 16.7% for the two most recent years, 1956 and 1957, an increase of 1%. The proportion sent to nursing homes and charitable institutions rose from 0.6% to 2.0% in the same periods. The proportion transferred from the Psychiatric Service to other services of general hospitals likewise rose from 1.6% to 3.6%. The number discharged to jail or police courts

CHART 2

DISCHARGES FROM ALBANY HOSPITALPSYCHIATRIC SERVICE IN 1952-1953 AND 1956-1957 BEFORE AND AFTER TRANQUILIZERS

Destination of Patients Discharged From Psychiatric Service	*Before* 1952 and 1953	*%* 1952 and 1953	*After* 1956 and 1957	*%* 1956 and 1957
State Mental Hospitals	457	15.8%	458	16.7%
VA and Private Mental Hospitals	27	0.9%	22	0.8%
Nursing Homes and Institutions	17	0.6%	56	2.0%
Other General Hospital Services	48	1.6%	98	3.6%
Returned to Police and Jail	12	0.4%	34	1.2%
Died on Psychiatric Service	24	0.8%	24	0.9%
Home to Family	2338	79.9%	2058	74.8%
TOTAL DISCHARGES	2923	100.0%	2750	100.0%

CHART 3

DIAGNOSES OF ALBANY HOSPITAL DISCHARGES BEFORE AND AFTER USE OF TRANQUILIZERS—PSYCHIATRIC SERVICE 1951-1953, 1955-1957

Diagnoses—Acute and Chronic Brain Syndromes	*Before*	*%*	*After*	*%*
Acute Alcoholic Intoxication Syndromes	224	5.2%	264	6.3%
Drug or Poison Intoxication	21	0.5%	48	1.2%
All Other Acute Brain Syndromes	61	1.4%	104	2.5%
Chronic Alcoholic Brain Syndrome	38	0.9%	54	1.3%
Cerebral Arteriosclerosis	195	4.5%	257	6.2%
Senile Brain Disorder	214	4.9%	97	2.3%
Intracranial Neoplasm	13	0.3%	12	0.3%
Syphilis of Central Nervous System	8	0.2%	4	0.1%
All Other Chronic Brain Syndromes	125	2.9%	134	3.2%
TOTAL BRAIN SYNDROMES	899	20.8%	974	23.4%

rose from 0.4% to 1.2%. Mortality did not change, being just under 1%. The number of patients discharged directly to their homes dropped 5% to 74.8%. The newer drugs have not enabled us to send more patients home, a finding in conflict with experience at the New York state hospitals which discharged more patients than were admitted in 1956 and 1957.

All Discharge Diagnoses: Albany Hospital

The experience of a general hospital psychiatric service with results of rapid-tempo therapy (patient stay is limited to 60 days and averages 10 days) is at such variance with that of state mental hospitals that a review of the discharge diagnoses is warranted.

Charts 3, 4 and 5 show the number and percentage of common diagnostic entities in the three years immediately before and after the 1954 introduction of tranquilizing drugs, i.e., from 1951-1953, and the past three years, from 1955-1957. Chart 3 shows a noticeable increase in acute alcoholic syndromes (including delirium tremens) and arteriosclerotic brain disorder, while senile disorders showed a decline of greater magnitude and total brain syndromes, acute and chronic, showed a slight rise due to the increase in acute syndromes more than compensating for the decline in chronic brain disorders.

Chart 4 shows no significant change in the percentage of the total of functional psychotic disorders which remained at about 44.5% of the total for all discharges. A rise in incidence of manic-depressive reactions of nearly 100% is compensated for by the decline in involutional psychotic reactions and schizophrenic reactions. The incidence of severe depressive reactions increased 5% from 20% to 25%, while schizophrenic conditions dropped an equal 5% to 18.6%. These figures are quite different from state hospital statistics which give schizophrenic diagnoses a steady lead over mood swings. Notable is the decrease in psychoneurotic reactions which, in 1955-1957, were a little more

CHART 4

DIAGNOSES OF ALBANY HOSPITAL DISCHARGES BEFORE AND AFTER USE OF TRANQUILIZERS—PSYCHIATRIC SERVICE 1951-1953, 1955-1957

Diagnoses—Psychotic Disorders	*Before*	*%*	*After*	*%*
Involutional Psychotic Reaction	459	10.6%	348	8.4%
Manic Depressive Reaction	278	6.4%	502	12.1%
Psychotic Depressive Reaction	141	3.3%	171	4.1%
Schizophrenic Reaction	1027	23.6%	775	18.6%
Paranoid States and Others	25	0.6%	64	1.5%
TOTAL PSYCHOTIC DISORDERS	1930	44.5%	1860	44.7%
Psychoneurotic Reactions	729	16.8%	378	9.1%
Psychophysiologic Disorders	7	0.2%	29	0.7%
Special Symptom Reactions	4	0.1%	24	0.6%
Transient Situational Personality Disorders	20	0.5%	114	2.8%

CHART 5

DIAGNOSES OF ALBANY HOSPITAL DISCHARGES BEROFE AND AFTER USE OF TRANQUILIZERS—PSYCHIATRIC SERVICE 1951-1953, 1955-1957

Diagnoses	*Before*	*%*	*After*	*%*
Personality Pattern Disturbances	48	1.1%	112	2.7%
Personality Trait Reactions	59	1.4%	147	3.5%
Antisocial Personality Reactions	23	0.5%	15	0.4%
Dyssocial Personality Reactions	25	0.6%	7	0.2%
Sexual Deviations	6	0.1%	8	0.2%
Alcoholic Addiction	495	11.0%	303	7.3%
Drug Addiction	43	1.0%	38	0.9%
TOTAL PERSONALITY DISORDERS	699	16.1%	630	15.2%
Without Mental Disorder	22	0.5%	106	2.6%
Mental Deficiency	25	0.6%	36	0.9%
TOTAL ALL DISCHARGES	4335	100.0%	4156	100.0%

than half of those reported in the pre-tranquilizer period.

Chart 5 shows a doubling in the number of personality trait and pattern disorders and a decrease in the number of chronic alcoholics. The increase in the number of patients classed as without mental disorder represents an increase in transfer of psychiatric patients to medical and surgical services after a demonstration that they could be successfully cared for in an open ward and recognition that the medical or surgical condition was the primary problem in many instances.

Author's Private Patients

The general tenor of the over-all survey of the results for the entire Albany Hospital Psychiatry Department were so unexpectedly negative for the era after the introduction of the tranquilizing and energizing drugs, that the author believed a more detailed analysis of his own private practice results might be more revealing. His cases represented just over 10% of all admissions, yet the 319 admissions in 1952-1953, and 300 in 1956-1957, are a significant sample.

Charts 6, 7 and 8 show the diagnostic categories:

CHART 6

DIAGNOSES OF ALBANY HOSPITAL DISCHARGES BEFORE AND AFTER USE OF TRANQUILIZERS—AUTHOR'S PATIENTS 1952-1953, 1956-1957

Diagnoses	*Before*	*%*	*After*	*%*
Acute Alcoholic Intoxication Syndromes	15	4.7%	7	2.3%
Acute Drug or Poison Intoxication Syndromes	7	2.2%	3	1.0%
All Other Acute Brain Syndromes	9	2.8%	7	2.3%
Chronic Alcoholic Brain Syndrome	0	0.0%	2	0.7%
Cerebral Arteriosclerosis	11	3.4%	10	3.3%
Senile Brain Disorder	2	0.6%	4	1.3%
Intracranial Neoplasm	2	0.6%	1	0.3%
Syphilis of Central Nervous System	3	0.9%	0	0.0%
All Other Chronic Brain Syndromes	4	1.3%	5	1.7%
TOTAL BRAIN SYNDROMES	53	16.5%	39	12.9%

CHART 7

DIAGNOSES OF ALBANY HOSPITAL DISCHARGES BEFORE AND AFTER USE OF TRANQUILIZERS—AUTHOR'S PATIENTS 1952-1953, 1956-1957

Diagnoses	*Before*	*%*	*After*	*%*
Involutional Psychotic Reaction	40	2.5%	34	11.3%
Manic Depressive Reaction	34	10.7%	77	25.7%
Psychotic Depressive Reaction	10	3.1%	15	5.0%
Schizophrenic Reaction	72	22.6%	53	17.7%
Paranoid States and Others	0	0.0%	6	2.0%
TOTAL PSYCHOTIC DISORDERS	156	48.9%	185	61.7%
Psychoneurotic Reactions	78	24.5%	28	9.4%
Psychophysiologic Disorders				
Transient Situational Personality Disturbance	2	0.6%	3	1.0%

CHART 8

DIAGNOSES OF ALBANY HOSPITAL DISCHARGES BEFORE AND AFTER USE OF TRANQUILIZERS—AUTHOR'S PATIENTS 1952-1953, 1956-1957

Diagnoses	*Before*	*%*	*After*	*%*
Personality Pattern Disturbance	1	0.3%	3	1.0%
Personality Trait Reactions	2	0.6%	6	2.0%
Sexual Deviation	0	0.4%	2	0.7%
Alcohol Addiction	13	4.3%	24	8.0%
Drug Addiction	1	0.3%	3	1.0%
Mental Deficiency	1	0.3%	1	0.3%
Without Mental Disorder	8	2.6%	3	1.0%
TOTAL WITHOUT PSYCHOSIS	110	34.6%	76	25.3%
GRAND TOTAL ALL DISCHARGES	319	100.0%	300	100.0%

Chart 6 shows a small drop in the proportion represented by organic brain syndromes in 1956-1957, a trend opposite to that for the service as a whole. There was a notable increase in the number of manic-depressive reactions and mood-swing disorders which reached 42%, more than double the number of schizophrenic reactions. The incidence of psychoneurotic reactions showed a very significant drop from 24.5% before, to 9.4% after tranquilizers. Psychoneurotic depressive reactions which were commonly admitted prior to 1954, were no longer admitted in significant numbers. They account for the fall in non-psychotic disorders admitted to the hospital in the author's private practice.

Chart 9 shows details of the use made by the author of electroshock therapy. It is quite surprising to find an increase in the proportion of patients given EST—from 28.3% before to 32.5% after use of the newer drugs. The length of hospital stay and the number of EST's per patient treated has declined slightly as has the use of multiple courses of EST, but the total number of EST's given to all patients has increased.

Fewer patients needed re-admission the same year, a drop of some significance, from 23.1% before, to 14.9% after introduction of these new drugs. In several instances, depressed patients responded so promptly and well to iproniazid as to require no other treatment, whereas they previously required several courses of EST each year. In other instances, patients put on iproniazid on admission responded so dramatically to the first EST as to curtail their stay considerably. Maintenance EST is no longer urged by this author unless iproniazid is not tolerated or is ineffective at low dosage.

Discussion

New drugs have enabled the author to relieve many mild depressive states without hospitalization or use of electroshock treatment. However, electroshock is usually speedier in accomplishing recovery. Safety of the two methods is about the same. There have been two deaths in the course of electroshock therapy in seven years, both in serious cardiac conditions. Drugs have caused no deaths in this period among patients of the Psychiatric Department, but we know of deaths due to drugs in this area and elsewhere and we have seen severe agranulocytosis and liver disorder. Tranquilizers often increase depression. Energizers are often too slow to safeguard a suicidal patient.

Conclusion

Data are presented on the use made of electroshock therapy in a general hospital psychiatric service prior to and after the introduction of tranquilizing and energizing drugs.

A detailed study of the author's private hospitalized patients shows that in spite of wide use of the new drugs, electroshock therapy has not declined in use. Milder depressions are less often admitted.

The newer drugs have not dcreased transfers to state hospital, nor increased the number of patients sent directly home. After an initial decrease in the use of electroshock after introduction of tranquilizing and energizing drugs, electroshock has regained the ground lost and remains the speediest therapy for relief of the acute psychotic reactions, notably depression.

CHART 9

ELECTROSHOCK THERAPY AT ALBANY HOSPITAL 1951-57

BEFORE AND AFTER INTRODUCTION OF TRANQUILIZER DRUGS IN 1954-1955

Author's Private Cases	1952	1953	Before Total	1956	1957	After Total
Author's Private Patients, Total	414	341	755	345	380	725
Admissions, First and Readmissions	174	145	319	155	145	725
% Admissions Given EST	63%	57%	60%	66%	59%	63%
% All Private Patients Given EST	26%	30%	28%	33%	32%	32.5%
EST Courses Per Patient	1.23	1.13	1.18	1.13	1.15	1.14
Number EST's Per EST Patient	8.1	7.0	7.6	6.8	6.8	6.8
Average Number Days Hospital Stay	11.4	11.3	11.4	10.4	10.1	10.3
Number EST Patients Not Admitted	32	36	68	33	47	80
% EST Patients Readmitted Same Year	24%	22%	23%	15%	15%	15%
EST Patients Readmitted from Previous Year		12			17	
Total Number EST's Given	871	731	1,602	769	845	1,614

Iproniazid Used In Attempted Suicide

SAMUEL A. SANDLER, M.D.

The drug iproniazid (Marsilid) recently marketed as a psychic energizer in the treatment of depressions because of favorable reports, has been widely used within the past year. Since many cases of depression are potentially suicidal, anything that would successfully prevent any such unfortunate occurrence is welcomed by the practicing physician.

A number of cases of hepatitis, yellow jaundice and even in a few instances death have been claimed to follow its use. Recently there were dramatic and hysterical appeals over the radio and in the newspapers for all patients who have used this drug to immediately consult their physician. In New York City agents of the Board of Health went so far as to raid drug stores for bottles containing concentrated amounts of Marsilid. Due to the unusual interest in this drug, iproniazid, I thought it would be of some importance to report a case which is the first record that I could find of an attempted suicide with this medication.

The patient R. G. was admitted to Bergen Pines Hospital on 4/15/58 as an emergency. She had taken between 30 and 35 tablets of Marsilid (50 mg. tablet) about one hour prior to admission. At that time her pulse was 80, blood pressure 110/70 and respiration 18 per minute. She seemed to be in good general condition; she was alert, oriented, her reflexes were normal. A gastric lavage was performed within 15 minutes of her admission with apparently good results.

The history revealed that the patient had been depressed for the past year following birth of her first child. She was put on Marsilid 50 mg. t.i.d. for a period of three weeks with good results. During the past year she has had a number of episodes of depression. A few days before admission, she developed a severe depression. She was again put on 50 mg. of Marsilid t.i.d. for several days until her suicidal attempt.

Investigation of her home life revealed that since childhood she has been an unhappy youngster. Her parents were constantly quarreling. She wanted to attend college but was deprived of the opportunity of doing so with resulting hostility towards her parents whom she thought could afford to pay for her education. She has little self-confidence and is always comparing herself unfavorably with her sister who has been successful in both social and economic spheres. The patient herself is married to an artist who is a financial failure and has been unsuccessful as an artist.

The neurologic examination was negative for any organic disease of the central or peripheral nervous system. However, there were functional signs such as:

Marked dermographia and midline sensory changes.

Laboratory tests revealed the following:

BSP retention showed 0%, thymol turbidity: 5.0, caphalin flocculation: 0, alkaline phosphatase: 1.6 units.

Complement fixation test for syphilis was negative. Blood count and urine examinations were within normal limits. X-ray of the chest and skull were normal. An EEG was normal.

Comment: From the standpoint of the clinical reaction to ingestion of this large amount of Marsilid, it left no trace of her depression 24 hours later. She seemed energetic and euphoric.

From the standpoint of possible liver, kidney or central nervous system damage or intoxication, there was no clinical or laboratory evidence as far as could be ascertained. Although the patient swallowed about 1500 mg. of Marsilid, she was given a gastric lavage about an hour and 15 minutes later. It is uncertain how much Marsilid she actually absorbed.

Conclusions:

1) That there was no evidence of any liver damage as far as we could ascertain.

2) That the amount of Marsilid the patient swallowed is apparently the largest amount recorded for any one time.

3) That instead of destroying herself with the Marsilid, the drug temporarily lifted her depression.

*Marsilid—Hoffmann-La Roche.

A Syndromic Approach to "Acting-Out" Children

MAURICIO KNOBEL, M.D.

A great shortcoming in psychiatry, and in child psychiatry in particular, is the absence of a clear-cut diagnostic formulation of the presenting problem. There are such a multitude of approaches, criteria, and points of view that it is often difficult to understand, or better, to know, what each specialist or clinic is treating in a specific case. With the advent of the "ataractic era" in psychiatry, confusion regarding diagnoses have become even more acute. By the use of drugs many clinicians appear to erase every concept of integrative nosology from this field of medical practice.

I wish to consider here one of the undefined syndromes that has been variously referred to as "acting-out," impulse disorder, hyperactive behavior problem, severe conduct disturbance, etc. It is often likely that the acting-out behavior disorder is based upon organic disabilities. My approach is to assemble both the psychological and biological components of the problem.

"Progress in the clinical field depends not only upon sensitive intuitions, but equally upon empirically verified generalizations,"[11] and as Gordon Hamilton pointed out: "diagnosis represents the contribution of science to art, the core of knowledge at any given time in the life of a profession."[30]

In order that there be a common understanding, we must have a syndromic approach to child psychiatry. Otherwise, everybody will talk a different language, and we will find we are not progressing. Seldom does science advance through individual and isolated efforts. The only useful way to make an integrative effort in our field is to clarify our diagnostic criteria. Unfortunately, diagnostic criteria are linked with a particular theoretical frame of reference, implying also a therapeutic philosophy.[19] The child guidance clinic approach to child psychiatry, with the idea that a child guidance clinic is a truly social institution in which the child is looked upon as part of a social setting, namely his family, and not as an individual entity,[1,16] thwarted the establishment of a descriptive, phenomenological view of children's mental disabilities. I do not suggest a return to the old descriptive psychiatry but I do not agree with the exclusive use of the sociodynamic approach. A longitudinal study of the patient and his mediate and immediate environment has always been a part of our point of view,[36,37] but I think we have neglected the individual in favor of the environment. It seems that we have also neglected biology to think only in terms of psychology and dynamics.

Personality may change markedly because of organic modifications. Certain organic factors which affect the brain may also act as a determinant of personality just as certainly as does the environment.[27] We should not forget that our personality also has a biological component. As Terhune[54] has said: "Because of ignorance as to the physiology and pathology of the nervous system in mental disorders, we developed a concept of psychodynamics whereby purely psychological theories were advanced to explain mental disease." If we agree that personality is a bio-psycho-socio unity, we cannot disregard any of the components of this integrated unit. I do not think that psychiatry is a behavioral science. I consider it a science of the personality and that behavior is mere expression of personality. Personality can be damaged in one of its components or in all of them, and it is the role of the psychiatrist to find out which is the case.

When there is evidence, or the probability of evidence, of an organic participation in a psychiatric syndrome we should exhaust the diagnostic possibilities in that direction. Organic bases for behavior disturbances were long ago postulated. In 1934, Kahn called "driveness" a "clinical picture of emotional and psychomotor disinhibition resulting from loss of control by the new brain or by the hyperexcitability of the old brain."[34]

Magoun[43] and his associates, working with the "activating system" demonstrated how

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it affects the cortex in a generalized manner without a topographical localization. According to Jasper[31] there may exist in the thalamus a similar system which would exert its influence upon more restricted cortical areas. Stimulation of specific cortical areas can modify the activity of the reticular system.[31] This cortico-subcortical interaction is extremely important for the understanding of behavioral changes due to encephalic lesions. The thalamo-cortical correlation seems to have an enormous importance in the expression of emotion. According to Spiegel and co-workers,[50] there exists a multiple representation of this emotional function.

The problem of psychosomatic medicine from the neurophysiological point of view is an advance toward a more scientific, and demonstrable explanation of how cortical dysfunction, associated with psychologic problems, may determine dysfunction in different parts of the organism and in the visceral system in particular.[41,42,44] The effect of the frontal lobe as a control area and its relation to behavior problems has been exhaustively studied and controlled. In addition, the general influence of different cortical areas on specific and unspecific behavioral traits has been explored. There is a complex interaction of defective functions, irritations and inhibitory releases.[13,18,21,23,47]

The temporal area has been found to be closely related to behavior problems and perhaps even the so-called epileptic personality disturbances may be attributed to alterations in the anterior temporal areas.[3,24] The whole gestaltic approach to human behavior is apparently based on organic considerations.[4,5,6,8,10,25,26,52,56,57] We wish to clarify that organic doesn't necessarily mean anatomical or structural lesions; it could refer to an encephalic dysfunction for reasons presently not known, or a dysfunction due to a change in the enzymatic participation in brain metabolism.[2,15]

Referring to acting-out children in the "Character Impulse Disorder" described by Frosch and Wortis,[22] the authors suggest an organic basis associated with psychological factors in explaining the syndrome. Laufer and co-workers[38,39] are definite about the diencephalic dysfunction in their "Hyperkinetic Impulse Disorder." They suggest an injury or dysfunction of the diencephalon in early life resulting in "undue sensitivity of the central nervous system to stimuli constantly pouring in from peripheral receptors and from viscera." In addition, they suggest that the interaction of the cortex and the diencephalon is also alternated and that "the resulting components of sensitivity and forced responsiveness to stimuli, inability to inhibit and delay responses, and visual-motor difficulties, all combine to produce the characteristics of the hyperkinetic syndrome."[38]

We are somewhat reluctant to accept a diagnosis of a diencephalic dysfunction or lesion, produced in early life, without any other significant pathology but the behavior disorder. We would expect a more complicated symptomatology and more expressive psycho-neurologic and endocrine-metabolic sequelae. We are inclined to think that the disorder may be cortical or more probably in the cortical-subcortical pathways. We base our opinion on the slower development of the cortex, as compared with the diencephalon. Especially is this true of the neo-cortex. This makes it more susceptible to damage at an early (quasi-embryonic) stage of development even after birth (the prefrontal cortex seems to be developing until approximately 10 years of age). Current literature gives us more experimental data for human beings in regard to cortical participation in behavior. The cortex seems to play an important role in the process of integration of reality, in patterning external situations, and in the learning process in general. Furthermore, the larger mass of cortical matter, and the broader distribution of the cortex allow us to admit, with more assurance, the possibility of alterations that would produce slight changes, in contrast to the diencephalon where trauma produces a more complicated and spectacular symptomatology. Of course, this criterion doesn't imply that diencephalic dysfunction doesn't exist, but if there, it should be present as a consequence of the cortical alteration due to cortico-diencephalic connections. We see in these acting-out children a behavior which seems so primitive, so uncontrolled, so "sub-cortical," that we are prone to accept the controlling

function of the cortex and feel that the dysfunction lies there.

On this basis we were tempted to shift from a purely psychogenic criterion to a more integrated psycho-physiological point of view, in which an unspecific cerebral dysfunction would be the original cause for the behavioral problem. As the child grows his interpersonal relations would greatly influence both the manner and the intensity with which the basic disorganization expresses itself. Psychological factors become so interwoven with the biological dysfunction that it would be extremely difficult to elicit which is more important. I can agree with the "outstandingness" of the external factors but I would insist that the primary disorder lies in the child's brain. As Lauretta Bender pointed out, "a dynamic inter-relation may describe the psychological problem but still doesn't touch the cause."[10]

Stemming from Bradley's[12] concept of the "organic behavior syndrome," Laufer and his co-workers developed a criterion to identify a syndrome called "Hyperkinetic impulse disorder,"[38,39] which in its symptomatology resembles in many ways the syndrome I am going to describe. However, their syndrome could be considered associated with cerebral palsy, blindness, deafness or mental retardation. These I consider separate entities.

When I began with the "acting-out" children I frequently found many of the symptoms already described. In some cases the reaction to environmental situations was clear, but in others the most elaborated and biased analytical interpretation failed to provide a satisfactory explanation. The neurological components were obvious when clear-cut antecedents of traumata or infection were present or when clear-cut neurological symptomatology was associated with the behavioral problem. Frequently, however, biological antecedents were impossible to find and no apparent neurological evidence could be uncovered. Soon I began to realize that cases differed in spite of the common pattern of acting-out; that there were differences of shade and intensity, in the association of symptoms, in the verbal and nonverbal communications, and especially in the patterns of hyperactivity.

With these slight differences I considered that we might start differentiating several categories of "acting-out" behavior. The idea was that a "syndromic" approach would help us to identify our cases. The dynamic interpretation might help to treat the particular case, when treatable. I felt we would help ourselves in understanding the several different types of "acting-outers." For the purposes of this approach, I excluded the most severely disturbed—those in constant conflict with social and familial authorities (police-parents) commonly categorized as delinquents and in another school of thought considered psychopathic personalities. The clear-cut neurological cases (cerebral palsy, post-encephalitic, post-traumatic) were not considered. Feeble-minded children in the moron or borderline level were detached. Epileptic cases with evidence of grand mal, petit mal or psychomotor spells were also set apart. Neurotic traits such as nail biting or bed wetting were considered as contaminating the syndrome or as constituting another clinical form within the syndrome.

I recorded the following list of possible symptoms: short attention span, impaired memory, distorted perception (reading and/or writing difficulty), intellectual performance below the expected level, inconsistency in the thought process, inability to make decisions, low frustration tolerance, making excessive demands without being satisfied, poor peer relationships, impulsivity, destructive and purposeless behavior, hyperactivity with poor coordination, poor living habits, aggressivity and classroom disturbance.

As a preliminary study we wished to check our symptom list of closed cases from our Child Guidance Clinic. With this purpose in mind we reviewed the symptoms and picked out one particularly common symptom, namely "classroom disturbance." I realize this is not a very satisfactory term and I will clarify it later. We went through a random selection of 100 cases and found 37 exhibiting "classroom disturbance." A review of the 37 cases showed that there were associated 81 per cent of "poor peer relationship" and 78 per cent of "intellectual performance below the expected level." This

was the main triad. Further came 48 per cent with aggressivity, 48 per cent "impulsivity," and 40 per cent "distorted perception," "destructive behavior" and "hyperactivity." Other symptoms were demonstrated in lower incidence and will constitute data for future work. We feel that we are now able to go ahead and examine the "acting-outers' with a more objective criterion, prior to going into the dynamics of the case.

Let us describe briefly the most common symptoms we found in this category of "acting-outers":

Classroom Disturbance: I am considering here a child who is able to go to school but is unable to adjust adequately to the classroom discipline. He will over-talk, move around, fidget. He will be the one who demands teacher's attention more often than the other children. He will engage in different kinds of misbehavior distracting the rest of the class. An important trait to consider is his motion, his physical activity. He may be a disruptive factor because of his outstanding reading or writing problems, which may become unbearable for him or a source of aggressive, and mocking reaction from the rest of the class. I am excluding the overt defiance of authority (which I consider belonging more to other kind of reactions), the criminal aggressive who threatens the other children, and all the children that call teacher's attention to their withdrawal, inattentiveness, day dreaming, and any other kind of behavior that in some way would imply that the child withdraws within himself and loses contact with his immediate reality. The children we are concerned with here have contact with the immediate reality but in a disorganized, disharmonious way. I acknowledge that we are not satisfied with this symptom description and are trying to find a better nomenclature and way of precisely describing this aspect of behavior.

Poor Peer Relationships: These children tell us how difficult it is for them to make friends. They reject or are rejected by their peers. Their manners are so poor that it is difficult to associate with them. Many times they just want to boss others around or go their own way, disregarding the rights of others. In playing they participate in the games they like but do not care for other group activities. It should be emphasized that they do not withdraw from their peers; they reject them or are rejected. They follow a pattern of trying and losing.

Intellectual Performance Below the Expected Level: In general they have an average IQ or are brighter. We exclude the dull or borderline children. In our review, 78 per cent showed that they should potentially be able to perform much better than they did, according to the test material. Their poor performance is not clearly intentional, and it appears to be as a consequence of their classroom maladjustment. It is possible that a short attention span, or distorted perception is a factor in this disability.

Impulsivity: This is motion without control and consideration. In our cases the impulsive act may be accompanied by aggressivity, but it will generally be present as part of the hyperactivity, hypertalkativeness and minor misdemeanors. I exclude the "impulse disorders" shown in perversion like sexual deviations or neurotic expressions like kleptomania or pyromania.

Aggressivity: We consider aggression, for the purpose of a syndromic identification as an unprovoked physical attack. We exclude twisted or deviant ways of expressing hostility as seen in passive-aggressive personalities. Aggression may also be verbal and is generally impulsive, never premeditated. It would never reach a delinquent level such as threatening those around them as happens in other categories of acting-outers.

The psychoanalytic school has done a great deal toward the understanding of aggression. Melanie Klein[35] postulates the existence of aggressive impulses against the mother since early childhood and the consequent guilt feelings. In this frame of reference a child fluctuates constantly between two poles, love and aggression, being essentially ambivalent. In the analytic field, Phylis Greenacre[28] links the reactional situation with the basically organic, and, in the analysis of a four-year-old, intellectually retarded child, says, "It is probable that in many such cases the restraint was actually enforced partly because of the child's original impairment rather than the opposite, and that subsequently the two factors of

original intellectual deficit plus severe restraint act together to the child's further detriment."

I believe that it is possblie to postulate the same sequence in regarding hostility as a combined product of a basic organic lack of capacity to restrain inner impulses and environmental conditions that provoke the aggressive response.

Bender[7,9] denied the Freudian concept that aggression is a primordial reaction to frustration and that it is an instinctual drive equated with the death instinct. For her, "Aggression in childhood is primarily constructive and only secondarily destructive, hostile and guilt arousing," but she admits that "aggressiveness has close relation to motor drives and undoubtedly has its foundations in the organic structure." To her this basically organic aggression is more diffuse while that related to a psychic trauma is directed to a specific object. Accepting that "behavior is a continuous process of trial and error," "aggression results from experimentation with objects in the external world."[7]

Distorted Perception: Newman's[45] "acting-out" boys had a clear impairment in reading; Bennett and Rogers[11] found some perceptual problems in the behavior disorders; Laufer and co-workers[38,39] in their "hyperkinetic impulse disorder" emphasize the perceptual problem. Goldstein[26] called attention to the perceptual problem and with his "gestaltic" orientation emphasized the alteration of the figure-background perception as a consequence of brain damage. Disorder of conceptual thinking is detected in the brain-injured child as a consequence of his impaired perception.[52,56,57]

Brain integrity is essential for a good perception, and a distorted perception will bring a chain of distorted experiences in the different facets of daily existence. The so-called normal skill to perform would be impaired and the child would try, incessantly, to learn how to perform. "The brain injured child has been thwarted on the way toward acquiring such abilities."[51]

I think it is reasonable to assume that the distorted perception we find in our acting-out children could be the result of some kind of brain dysfunction. Reading and writing difficulties should be carefully checked and appropriate tests should be used to clarify this fundamental aspect of the problem.

Hyperactivity: In contrast to another broad category of children who come to the teacher's attention because of being different—the withdrawal child—our acting-out child shows an almost perpetual motion. The first thing that struck us wās the hyperkinesis they showed in the psychiatric interview. They would fumble around with their fingers, writhe and twist in the chair, standing up and sitting down again and again, walking around the office while answering our questions.

For some authors the hyperkinesis is primordial and fundamental.[38,39] Fenichel[20] speaks about a heightened constitutional motility in the neurotic acting out children, probably related to the unconscious belief in the magic of action.[29] Acting is a more primitive biological expression than words and in any lack of specific higher controls we may expect a larger externalization of physical activity.

When we started looking at hyperactivity, I thought we would have to consider it as associated with poor coordination. However, it is not easy to elicit the poor coordination (unless there is a clear neurological association, in which case this invalidates our presumptive diagnosis) and that point has had to be postponed. Nonetheless, we have the impression that there are some characteristic features in the hyperkinesis, that would remind us of a very minimal choreoathetosis.

The above symptoms seemed all the more remarkable in retrospective analysis. That does not imply that it may not be necessary to change them, at least in categorial relevance and that some other symptoms may not have to be included to form the core of the syndrome we are trying to define. Among these others we would expect to find the short attention span, the making of excessive demands without being satisfied and low frustration tolerance.

One of the most difficult problems is the evaluation of the presumptive organicity I have postulated. We realize that psychological testing can often be helpful in the de-

tection of organicity and that a great deal of research and experimentation has already been done in this field. Some authors describe positive findings with Rorschach techniques.[48,49,55] Recently, in Europe, a psychiatrist as important as Delay and his co-workers,[17] published a paper in which they indicate that Piotrowski's technique for eliciting organicity with Rorschach data is more reliable than the neurologic examination or the spinal puncture and comparable to skull radiology or the pneumoencephalography.

Presently, one of the most widely employed methods of detecting brain dysfunction is the electroencephalographic examination, and many studies have been undertaken in relation to the problem we are considering.[14,22,27,32,33,38,39,40,46,53,54] We acknowledge that it is not an absolute, precise and specific test and that an electroencephalographic reading in children is not an easy task and involves many contradictory elements. However, when we started thinking about the possible organic basis for this acting-out behavior in children, we asked for EEG's and we found that in 20 cases, 15 showed some abnormality in the EEG.

Thus, within the broad group of acting-out children we have this category with the above mentioned symptomatology and with a postulated organic base in a diffuse cortical disturbance, to explain its pathogenesis. Etiology is still unclear, but genetic antecedents or relatively minor prenatal, natal or post-natal infections or traumata must be considered. We have to recognize that we do not have enough data to go beyond the possibility of saying "we presume." This must be, for the time being, an essentially clinical evaluation. We are following the classical medical approach and going from the clinical observation to the experimental phase. We expect to integrate our study with a research design utilizing environmental (familial and social) data, a history of prenatal, natal and post-natal events, and careful psychometric and electroencephalographic control. Pragmatically, we find that attempting a syndromic approach helps us toward a better understanding of the problems we are facing clinically. We hope it will be possible to reach, in child psychiatry, a common language that will permit a reliable evaluation of therapeutic approaches, both psychodynamic and pharmacological.

Conclusion

Many of the children who are studied and treated in a Child Guidance Clinic are not properly evaluated diagnostically because of: a) an overemphasis of psychogenic factors, and b) the exclusion from consideration of covert organic signs in situations where it is possible to detect organicity by a more careful inquiry into the nature of the mother's pregnancy and the birth history and early development of the child. This is corroborated by electroencephalographic findings and psychological tests.

Summary

The need for a more accurate medical, diagnostic approach in child psychiatry is emphasized. One type of "acting-out" behavior in children is presented as part of a syndrome integrated by a symptom complex of: classroom disturbance, poor peer relationship, intellectual performance below an expected level, impulsivity, aggressivity, distorted perception and hyperactivity. Psychological testing indicating organicity and an abnormal EEG should be present. It is important to separate out the regressive acting-out seen in a withdrawn child, which is in contradistinction to the acting-out herein described that shows features of constantly pressing onward and affectively contacting external reality. The feeble-minded, cerebral palsy, encephalitic, epileptic and "psychopathic" groups represent other syndromes of acting-out behavior with an organic basis. Neurotic trait disturbances featuring nail-biting, bed wetting, etc., may constitute a clinical form of this syndrome or quite another entity.

A cortical dysfunction is hypothesized to explain the pathogenesis of the described syndrome. Psychosocial influence is not denied and may help greatly in clarifying the dynamics of a particular case. Further studies of the environment and pre-natal, natal and post-natal events will help to elucidate the etiology. This beginning study seeks to contribute to a syndromic approach

to child psychiatry, allowing for better understanding and more accurate knowledge.

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BIBLIOGRAPHY

1. Allen, F. H.: "Psychotherapy with Children." *W. W. Norton Co., Inc.,* New York, 1942.
2. Ashby, W.: An Approach to the Solution of Mental Dysfunction Through Brain Enzyme Studies. *Am. J. Psychiat.,* 106:491, Jan. 1950.
3. Bailey, P., and Gibbs, F. A.: Surgical Treatment of Psychomotor Epilepsy. *J.A.M.A.,* 145:365, 1951.
4. Bender, L.: "A Visual Motor Gestalt Test and Its Clinical Use." *Research Monograph No. 3, Am. Orthop. Assn.,* 1938.
5. Bender, L.: The Goodenough Test (Drawing a Man) in Chronic Encephalitis in Children. *J. of Nerv. & Ment. Disease,* 91:277, 1940.
6. Bender, L.: Post-encephalitic Behavior Disorders (in "Encephalitis, A Clinical Study," J. Neal, Ed. *Grune and Stratton,* New York, 1942.
7. Bender, L.: The Treatment of Aggression; Aggression in Childhood. *Am. J. Orthop.,* XIII: 392, July 1943.
8. Bender, L.: Organic Brain Conditions Producing Behavior Disturbances; a Clinical Survey of Encephalitis, Burn Encephalopathy and the Traumatic States (in Modern Trends in Child Psychiatry, W. D. C. Lewis and B. L. Pacella, Ed. *Int. Univ. Press,* New York, 1945.
9. Bender, L.: Genesis of Hostility in Children. *Am. J. Psychiat.,* 105:241, Oct. 1948.
10. Bender, L.: Psychological Problems of Children with Organic Brain Disease. *Am. J. Orthop.,* XIX: 404, July, 1949.
11. Bennet, Ch. C. y., Rogers, C. R.: The Clinical Significance of Problem Syndromes. *Am. J. Orthop.,* XI:222, April 1941.
12. Bradley, C.: The Behavior of Children Receiving Benzedrine. *Am. J. Psychiat.,* 94:577, 1937.
13. Brock, S.: Dynamic Mechanisms Underlying Some Forms of Cerebral Dysfunction. *Am. J. Psychiat.,* 105:246, Oct. 1948.
14. Cattell, J. P., y Pacella, B. L.: An Electroencephalographic and Clinical Study of Children with Primary Behavior Disorders. *Am. J. Psychiat.,* 107:25, July 1950.
15. Clark, Jr., L. C.: The Chemistry of Human Behavior. *Am. J. Orthop.,* 18:140, Jan. 1948.
16. Dawley, A. J., y Allen, F. H.: Social Aspects of Personality in Child Guidance Clinic Practice. *Am. J. Psychiat.,* 106:462, Dec. 1949.
17. Delay, J., et al.: Le test de Rorschach dans le Psycho-Syndrome Organique (Rorschach Test in the Organique Psycho-Syndrome). *Rev. Psychol. Appl.* (Paris) 6:247, Oct. 1956.
18. Dusser de Barenne, J. G., and McCulloch, W. S.: Supression of Motor Response Obtained from Area 4b by Stimulation of Area 4s. *J. Neurophysiol.,* 3:311, 1941.
19. Ekstein, R., and Friedman, S. W.: A Technical Problem in the Beginning Phase of Psychotherapy with a Borderline Psychotic Child (in: "Case Studies in Childhood Emotional Disabilities, Vol. II, George E. Gardner, Ed. *Am. Orthop Assn., Inc.,* New York, 1956).
20. Fenichel, O.: Neurotic Acting Out. *Psa. Rev.,* 32:197, 1945.
21. Freeman, W., and Watts, J. M.: "Psychosurgery." *Ch. C. Thomas,* Springfield, Ill., 1950.
22. Frosch, J., and Wortis, S. B.: A Contribution to the Nosology of the Impulse Disorders. *Am. J. Psychiat.,* 111:132, August 1954.
23. Fulton, J. F.: "Frontal Lobotomy and Affective Behavior." *W. W. Norton and Co.,* New York, 1951.
24. Gibbs, E. L., Gibbs, F. A., y Fuster, F. A.: Psychomotor Epilepsy. *Arch. Neurol. and Psychiat.,* 60:331, 1948.
25. Goldstein, K.: The Modifications of Behavior Consequent to Cerebral Lesions. *Psychiat. Quart.,* 10:586, October 1936.
26. Goldstein, K.: "The Organism." *Amer. Book Co.,* New York, 1939.
27. Gottlieb, J. S., Knott, J. R., and Ashby, M. C.: Electroencephalographic Evaluation on Primary Behavior Disorder in Children: Correlations with Age, Sex, Family History and Antecedent Illness or Injury. *Arch. of Neurol. and Psychiat.,* 53:138, 1945.
28. Greenacre, Ph.: Infant Reactions to Restraint. Problems in the Fate of Infantile Aggression. *Am. J. Orthop.,* XIV:204, April 1944.
29. Greenacre, Ph.: General Problems of Acting Out. *Psychoan. Quart.,* 19:455, 1950.
30. Hamilton, G.: "Psychotherapy in Child Guidance." *Columbia University Press,* New York, 1947.
31. Jasper, H., et al.: Corticofugal Projections to the Brain Stem. *Arch. Neurol. and Psychiat.,* 67:155, 1952.
32. Jasper, H. H., Solomon, P., and Bradley, C.: Electroencephalographic Analysis of Behavior Problem Children. *Am. J. Psychiat.,* 95:641, 1938.
33. Jenkins, R. L., and Pacella, B. L.: Electroencephalographic Studies of Delinquent Boys. *Am. J. Orthop.,* 13:107, 1943.
34. Kahn, E., and Cohen, L. M.: Organic Driveness, a Brain Stem Syndrome and an Experience. *New England J. Med.,* 210:748, April 1934.
35. Klein, M.: "The Psychoanalysis of Children." *Hogarth Press,* London, 1937.
36. Knobel, M.: Lo Social en Psicoterepia de la infancia (The Social Factor in Child Psychotherapy). *Arch. de Crimin. Neuropsic. y discipli. conexas* (Quito, Ecuador), III:25, Jan.-March 1955.
37. Knobel, M.: Un esquema de personalidad (A Scheme of Personality). *Jornada Med.* (B. Aires), 10:219, Aug. 1956.

38. Laufer, M. W., and Denhoff, E.: Hyperkinetic Behavior Syndrome in Children. *J. of Pediatrics,* 50:463, April 1957.
39. Laufer, M. W., Denhoff, E., y Solomons, G.: Hyperkenetic Impulse Disorder in Children's Behavior Problems. *Psychosom. Med.,* 19:38, Jan.-Feb. 1957.
40. Lindsley, D. B., y Cutts, K. K.: Electroencephalograms of "Constitutionally Inferior" and Behavior Problem Children. *Arch. Neurol. and Psychiat.,* 44:1199, 1940.
41. Livingston, R. B.: Some Brain Stem Mechanisms Relating to Psychosomatic Functions. *Psychosom. Med.,* 17:347, Sept.-Oct. 1955.
42. Livingston, R. B., and Worden, F. G.: Some Neurophysiological Contributions to Internal Medicine. *Stanford Med. Bull.,* 13:194, May 1955.
43. Magoun, H. W.: An Ascending Reticular Activating System in the Brain Stem. *Arch. Neurol. and Psychiat.,* 67:145, 1952.
44. MacLean, P. D.: The Limbic System ("Visceral Brain") in Relation to Central Gray and Reticulum of the Brain Stem. Evidence of Interdependence in Emotional Processes. *Psychosom. Med.,* 17:344, Sept.-Oct. 1955.
45. Newman, R. G.: The *Acting-out* Boy—Excep. Children, 22:186, Feb. 1956.
46. Pacella, B. L.: The Electroencephalogram in Behavior Disorders (in "Modern Trends in Child Psychiatry," Lewis, N. D. C., and Pacella, B. L., Ed. *Int. Univ. Press,* New York, 1945).
47. Penfield, W., y Rasmussen, T.: "The Cerebral Cortex of Man." *MacMillanCo.,* New York, 1951.
48. Piotrowski, Z.: The Rorschach Ink-Blot Method in Organic Disturbances of the Central Nervous System. *J. Nerv. and Ment. Diseases,* 86:525, 1937.
49. Schreiber, H., and White, M. A.: Diagnosing Organicity on the Rorschach. *Psychiat. Quart. Suppl.,* 28:255, 1954.
50. Spiegel, E. A., et al.: The Central Mechanism of the Emotions (Experiences with Circumscribed Thalanic Lesions). *Amer. J. Psychiat.,* 108:426, 1951.
51. Strauss, A. A., y Lehtinen, L. E.: "Psychopathology and Education of the Brain-Injured Child." *Grune & Stratton,* New York, 1951.
52. Strauss, A. A., y Werner, H.: Disorders of Conceptual Thinking in the Brain-Injured Child. *J. Neur. and Mental Dis.,* 96:153, Aug. 1942.
53. Strauss, M., Rahm, Jr., W. E., and Barrera, S. E.: Studies on a Group of Children with Psychiatric Disorders: 1. Electroencephalographic Studies. *Psychosom. Med.,* 2:34, Jan. 1940.
54. Terhune, W. B.: Physiological Psychiatry. *Am. J. Psychiat.,* 106:241, Oct. 1949.
55. Walton, D.: On the Validity of the Rorschach Test in the Diagnosis of Intracranial Damage and Pathology. *J. Ment. Sci.,* 101:370, 1955.
56. Werner, H.: Though Disturbance with Reference to Figure-Background Impairment in Brain-Injured Children. *Confinia Neurologica,* 9:255, 1949.
57. Werner, H., and Weir, A.: The Figure-Ground Syndrome in the Brain-Injured Child. *Intern. Record of Med. and Gen. Pract. Clinics,* 169: 362, June, 1956.

Erythrocytes from Schizophrenic Patients

A. HOFFER, PH.D., M.D.

Introduction

During an investigation of factors which influence the conversion of epinephrine into adrenolutin in plasma, Hoffer[1] found that pink plasma (hemolysis of erythrocytes) increased the rate of oxidation.[2] Schizophrenic plasma was compared against plasma drawn from patients undergoing surgery. It was noted that these samples of schizophrenic plasma did not differ in ability to oxidize adrenaline from the plasma from the non-schizophrenic surgical patients. However tracings of optical density against wave length by the methods of Leach and Heath[2] showed unusual depressions between 410 and 420 mu. This depended upon the concentration of fresh hemoglobin and other factors. Plasma from these surgical patients very often yielded those anomalous curves as did schizophrenic plasma. Attempts were made to draw the blood as carefully as possible in order to keep hemolysis due to mechanical rupture of erythrocytes at a minimum. In spite of these precautions, a high proportion of plasma samples from schizophrenic patients were pink. For this reason, an investigation was made of the fragility of the erythrocytes from various groups of patients and from normal subjects.

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Method

Venous blood was drawn into 20 ml. syringe using #20 needle. Very little pressure

was used. The blood was allowed to run by gravity into small Erlenmeyer flasks containing heparin.

A quantity of blood was diluted with an equal quantity of 0.9 N saline. The sample was mixed in a centrifuge tube and spun for 15 minutes at 5°C. at 2000 r.p.m. The supernatant was carefully removed. The cells were then washed twice with cold 0.9 N saline. After removing supernatant from the sample, sufficient saline was added to reconstitute the original volume of blood. This cell suspension was diluted 1 to 10 with saline. Test tubes were arranged containing the following concentrations of saline: 0.30%, 0.35%, 0.40%, 0.45%, 0.50%, 0.55%, and 0.60%; 0.1 ml. of the diluted cell suspension was placed in each tube. The tube was mixed and allowed to stand 30 minutes at room temperature. After this period, the tubes were centrifuged and the optical density of the supernatant determined in a DU Spectrophotometer at 420 mu or at 410 mu as will be indicated. Hemoglobin of the original blood was determined by measuring the iron content.[1]

Blood was drawn from the following patients from the University Hospital at Saskatoon—acute schizophrenic patients, patients undergoing surgery who were not mentally ill, patients from a psychiatric ward who were not schizophrenic including some from all diagnostic categories and from normal volunteers. Plasma was also obtained from chronic schizophrenic patients from the Saskatchewan Hospital, Weyburn, Saskatchewan.

The mean optical density at various concentrations of saline for the groups tested is shown in Table I.

Since optical density alone does not accurately reflect hemoglobin concentrations, a series of schizophrenic and non-schizophrenic subjects blood was examined in the same way as before but diluting the washed erythrocytes with equal volumes of saline (instead of to original volume) and measuring optical density at 410. The optical density and hemoglobin values of the original blood are shown in Table II.

TABLE II

Relationship of Optical Density at 410 mu and Hemoglobin Values

	Number	Hemoglobin gr./100 ml.	Optical Density at 410	Ratio
Schizophrenic	29	13.6	1.32	0.97
Non-Schizophrenic	32	14.5	1.32	0.91
K for hemoglobin values			2.88	(beyond 1%)
K for ratios			3.52	(beyond 1%)
N=113				
Correlation duplicate		0.98		
Mean difference		0.10		

Discussion

At the two highest concentrations of saline, the optical densities of the two schizophrenic groups were significantly higher than the other three groups. The non-schizophrenic group included all diagnostic categories found in psychiatric hospitals, probably with some early schizophrenic patients not yet clearly schizophrenic. They were intermediate in optical density. For chronic schizophrenics, the optical density was significantly higher at all concentrations.

TABLE I

Relationship of Optical Density of Hemoglobin in Various Concentrations of Saline and Various Diagnostic Groups Measured at 420

Group	N	*Optical Density at Salt Concentration Shown* 0.35	0.40	0.45	0.50	0.55	0.60
Normals	11	1.13	1.10	0.96	0.66	0.32	0.13
Surgical Patients	27	1.07	1.04	0.99	0.73	0.30	0.13
Non-Schizophrenic	21	1.26*	0.19	0.10	0.78	0.27	0.13
Schizophrenic—acute	14	1.50†	1.41†	1.17	0.69	0.23	0.10
Schizophrenic—chronic	17	1.36†	0.42†	—	1.10‡	—	0.39‡

* Significantly different from two normal groups.
† Significantly different from other three groups.
‡ Significantly different from other four groups.

At 410 mu, higher optical densities were found. This factor plus the lesser dilution accounts for the higher optical density of this group of non schizophrenic subjects compared to those shown in the previous table. Chronic schizophrenics were 0.9 mg. per cent lower (k=2.85 which is beyond the 1% level of probability). The optical densities were similar and the ratio for schizophrenics significantly higher. It therefore appears that per unit of hemoglobin measured by its iron content, schizophrenic hemoglobin is optically denser at 410 and 420 than non-schizophrenic hemoglobin. In addition, schizophrenic erythrocytes appear to be more fragile to hypotonic saline as well as to mechanical trauma. The reasons for the increased optical density are not known but may be due to the presence of substances in fresh hemoglobin which absorb light at these wave bands, perhaps like adrenolutin which has an absorption optimum at 395.

These differences and studies of the intermediary metabolism of schizophrenic erythrocytes[3] suggest that erythrocytes from schizophrenic patients ought to be a fruitful area to search for biochemical factors which may have something to do with schizophrenia.

The significance of this research is that it reinforces the finding of Boszormenyi-Nagy that schizophrenic erythrocytes are slightly different from normal erythrocytes. It also may help clarify some of the factors which play a role in the oxidation of adrenaline to adrenochrome in plasma.

This may be related to the adrenochrome hypothesis as it is known that adrenaline is absorbed within the red cell and held there and it may be that adrenochrome also plays a role within erythrocyte metabolism.

Summary

Hemoglobin derived from schizophrenic blood is optically more dense at 410-420 mu per unit of iron than obtained from non-schizophrenic blood. Schizophrenic erythrocytes are more fragile to hypotonic saline solutions.

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REFERENCES

1. Hoffer, A.: Adrenochrome and Adrenolutin and Their Relationship to Mental Disease. *Symposium Internazionale sui Farmaci Psicotropi,* Milan, May 9-14, 1957.
2. Leach, B. E., and Heath, R. G.: The in Vitro Oxidation of Epinephrine in Plasma. *Arch. Neurol. & Psychiat.,* 76:444-450, 1956.
3. Boszormenyi-Nagy, I., and Gerty, F. J.: Diagnostic Aspects of a Study of Intracellular Phosphorylations in Schizophrenia. *Am. J. Psychiat.,* 112:11-17, 1955.
4. Hawk, P. B., and Bergheim, G.: Practical Physiological Chemistry. 11th Ed. *The Blakestin Co.,* Philadelphia, 1944.

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A CORRECTION

In the article "Brain Tumor Presenting As Convulsive Disorder" by Drs. Strobos, Alexander and Masland published in December 1958 issue, Figure 2 on page 521 shows incorrectly the dates of the tracings. The left hand tracing should be 7/17/56 and the right hand tracing should be 7/22/50.

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